Institutional and Legal Aspects of Financial Development in Transition Economies

by

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Thesis submitted for the degree of

Doctor of Philosophy

at the University of London

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Abstract

This dissertation explores the impact of legal and institutional factors on the development of securities and banking markets in transition economies, and on flows of foreign direct investment into the same.

Chapter 1 introduces the main questions the dissertation seeks to address and identifies the topic of each chapter.

Chapter 2 presents the methodology, and focuses on the 1999 EBRD Legal Indicator Survey, which provided the data on securities and banking laws, and contract enforcement. It presents background information on the use of surveys in economics, and the economic rationale for attaching weights to the survey questions.

Chapter 3 studies the impact of securities laws on several measures of securities market development, and finds that stricter regulation of financial disclosure and market intermediaries raise stock market capitalisation and turnover. The enforcement of disclosure and regulation of intermediaries drives this result.

Chapter 4 studies the impact of banking law and its perceived enforcement upon banking development. It establishes that legal indices on information disclosure by banks, such as use of external auditors, and consolidated supervisory examinations of banks, raise private credit, and foreign bank entry. Fewer legal restrictions on foreign ownership of domestic banks are also associated with a more developed banking industry.

Chapter 5 examines the relevance of the contract enforcement environment for flows of foreign direct investment, and establishes that foreign investors are attracted to locations, with a transparent legislative process and dissemination of new laws, and which protect litigants' rights of appeal and judicial review of government decisions. FDI is higher in countries with higher confidence in the courts to resolve disputes with the government, but not so in countries with higher confidence in the courts to resolve disputes with private parties.

Finally, Chapter 6 summarises the main results, and offers policy implications and guidelines for future research.

Acknowledgments

My greatest debt is to Charles Goodhart - my PhD supervisor from the very beginning of my studies at the LSE. I thank him for steering me through the course of the PhD, for his constant advice and insights, for helping me to structure my research and for his patience and understanding. His lectures in Monetary Economics during my first year at the LSE motivated me to work in the field of money and finance applied to transition economies. I am particularly grateful to him for keeping his faith in me during the ups and downs of my research, and for teaching me that simple ideas are most difficult to explore. Also, I thank him for encouraging me to do empirical work and for shaping my academic interests. He has been a remarkable presence in my life as a PhD student.

I would also like to express my thanks to the two examiners – Professor Wendy Carlin of University College London, and Professor David Llewellyn of Loughborough University, who provided me with many useful comments and suggestions on how to improve this dissertation. They also kindly agreed to an extension for re-submission of the dissertation, for which I am very grateful.

I am also indebted to Simeon Djankov for providing much inspiration and academic advice. He has effectively acted as a supervisor over the last year of my PhD. Almost all of my thesis papers have benefited from his comments, and his friendly advice and personal support have been invaluable. I also thank him for inviting me to work at the World Bank, and for allowing me to take extended breaks at the LSE to complete the thesis.

I am also grateful to colleagues at the World Bank, such as Sue Goldmark, Axel Peuker, Migara Jayawardena, Maria Angelica Soto, and others, who supported me in taking an extended leave from work to prepare the revisions.

Anita Ramasastry showed faith in me at a time when I needed to choose a path in my research. She was instrumental in letting me into the world of law and finance,

and the intricacies of legal thinking. Together with David Bernstein from the EBRD they kept me involved in empirical work, which provided a unique dataset for my thesis. I am very grateful to both of them for that.

Max Steuer and the LSE Economics Department provided me with a flexible teaching load. I am also very grateful to the European Commission for sponsoring the first three years of my PhD research under the Phare-ACE programme. I am grateful to Charlie Bean and the LSE Economics Department for extending me extra conference funding. My thanks also go to Jenny Law, Alice Williams and Tara Lehane for solving the numerous administrative problems of life as a PhD student.

Special thanks go to staff at Butler's Wharf LSE Residence, where I lived and worked throughout my time as a PhD student in London. I am grateful to Julika Siemer and Jussi Hanhimaki for making life as a subwarden pleasant and stress-free. I am also indebted to my fellow-subwardens Dejan, George, Graham and Joe for their support and friendship.

Thanks go to my fellow PhD students and friends: Soenje, Paolo, Alex, Sonia, Niko, Volker, Philip, Marco, Jian, Michela, Vicente, Laura, Erlend, Cecilia, Andrea, Aniket, Michele. This bunch of people made my time at the LSE an enjoyable and stimulating experience. I also wish to thank Plamen, who has been a generous and reliable friend.

Finally, my deepest thanks are for my family. My mother Ganka, my father Slavtcho and my brother Radoslav have been utterly supportive throughout my studies. They have all been an inspiration and a source of much-needed emotional strength through the trials and tribulations of a PhD life. I also thank Radoslav for always being my great supporter. Many heartfelt thanks also go to my grandparents Stefana and Slav for always being there for me.

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Chapter 1

Introduction

Transition economies from Central and Eastern Europe and the former Soviet Union have undergone dramatic changes over the last ten years. At the beginning of the 1990s new markets began to be established where few or none had existed before. Some of the most far-reaching reforms have happened on the real side of the economy, namely privatization and restructuring of formerly state-owned enterprises. The main challenge of the transition period was to create foundations for new enterprises and to restructure old inefficient state-owned enterprises.

Financial market reforms began almost immediately at the start of the transition period, but have been rather slow, and proceeded in most of the transition countries with a lot of delays and hesitation. Many financial reforms were politically unpopular and left for implementation at a later stage. Financial crises, bank failures and fraudulent saving schemes occurred almost everywhere in this region. A key element of the transition was to create functioning capital markets, which involved both the creation of a two-tier banking system, and the establishment of a stock market. Thus, for example, during the transition process two-tier banking systems replaced the mono-bank system of the socialist years, and stock exchanges have re-emerged or were created in most of the 26 transition economies from Central and Eastern Europe

and the former Soviet Union (the exceptions with no stock market today are Albania, Bosnia and Herzegovina, Serbia and Montenegro, Tajikistan and Turkmenistan).

The banking sector plays an important role in the transition period. While stock markets were largely non-existent at the beginning of transition, banks as known in market economies, were relatively developed in some of the early reforming transition countries, such as Hungary. The mono-bank was usually broken up into new commercial banks in the early years of transition. Banks became crucial in extending loans to 'de novo' enterprises. However, the experience of several transition countries suggests that the banking sector was a major source of non-performing loans to old state-owned enterprises and that these loans have prevented the expansion of bank credit to the new, small and politically less connected enterprises. The accumulation of bad loans became instrumental in triggering the banking crises, which plagued a number of transition economies in the second half of the 1990s, and resulted in tightening of credit, thereby stunting the growth of new firms.

Simultaneously with the economic package of reforms, legal reforms started at the beginning of the transition period. Typically, the classical centrally-planned economy operated in the virtual absence of economic legality. However, we cannot think of a market economy without laws and courts, functioning in such a manner as to reduce the uncertainty of economic outcomes. Institutional reform is difficult and takes time to accomplish. Changing the rules, which govern the economic relationships between firms and individuals and between the government and the private sector, is likely to generate serious obstacles and resistance. Furthermore, the establishment of legal norms and rules, which protect investors, and fostering a culture of their proper enforcement takes time. During this period of time the investment process in the real sector as well as in the financial sector is hampered by great uncertainty. So long as there are no stable laws or their enforcement is inadequate, potential domestic or foreign investors regard such investments as very

risky. Thus, both domestic and foreign investment have been very low in almost all transition economies. A stable legal framework plays also an important role in securing financial stability. For example, Wagner (1998) reports that the existence of a rigid banking law and strict bankruptcy laws and proceedings, adopted after the unification in Germany, have generally prevented the uncontrolled credit expansion, which characterizes the other transition countries.

The purpose of the present dissertation is to examine the institutional and legal determinants of securities market development and banking development in transition economies. I divide my analysis into three distinct areas, namely: securities law and regulation and stock market development; banking law and regulation and banking industry development; and enforceability of commercial contracts and inflows of foreign direct investment (FDI). I introduce briefly each topic in the next paragraphs.

The majority of crises in transition economies have been financial in their origin and nature - failing banks, pyramid deposit schemes, collapsing investment funds, speculative currency attacks, etc. They span from lack of investor protection to cases of sheer fraudulence. Economists and legal scholars alike have long maintained that law is essential for sound finance. Consequently, legal reform has occupied an integral part of political transition in Eastern Europe and governments across the region have been delegated the laborious task of enacting new legal rules, supportive of a market economy.

An established theoretical view is that the availability of external finance (both equity and debt) to a country's private sector tends to be positively correlated with the quality of legal investor protection.[1] Fairly large-sample cross-country studies in institutional economics, linking legal origin and legal protections of outside investors to financial and economic development have spurred a plethora of empirical

[1]See for example La Porta, Lopez-de-Silanes, Shleifer and Vishny, (1997).

and theoretical work over the past few years, e.g. La Porta et al. (1997, 1998, 2000), Acemoglu et al. (2001, 2002), Djankov et al. (2002, 2003a, 2003b), Beck et al. (2000, 2003a, 2003b), Levine and Zervos (1998), among others. These recent studies in the area of institutional economics (recently dubbed "The New Comparative Economics") are exploring through what channels countries' legal origins matter for financial market development; whether institutional development has an independent impact upon economic growth, or affects it through its influence on the financial system; whether countries' geographical and disease endowments at the time of colonization have an impact on their current economic and institutional development; how government regulation affects financial market performance; which types of capitalist institutions – those which protect private contracting and enforcement between private firms or individuals, or those which ensure protection against the government and powerful elites. It is a rich research agenda, and one which is evolving fast.

In view of this research, which typically covers relatively large cross-sections or panels of data, the sample of countries studied in the current dissertation is limited to only about 20 transition economies. This limits seriously the degrees of freedom, with which we operate and make econometric inferences. Nevertheless, as we argue in Chapter 2 and further, the existing methodological concerns do not invalidate our approach, and we take measures to ensure the robustness of our results.

The main purpose of Chapter 2 is to present the methodology of the 1999 EBRD Legal Indicator Survey (LIS) – a survey of legal practitioners carried out in 1999 to assess progress in financial and commercial legislation and the enforcement of this legislation. Its purpose is to justify the methodology adopted and to present the rationale for the content of the LIS questionnaire and the scoring and aggregation of the questions in the survey. I will make the argument that surveys in general – particularly self-administered written questionnaires without a formal interview,

such as the LIS – must be well-designed in order to generate good-quality data. I will explain the economic rationale behind the aggregation of legal indices on securities and banking laws, utilised in later chapters. Furthermore, Chapter 2 presents an account of the extensive cleaning procedures, which I undertook in ensuring internal consistency, and lack of data coding errors. I will justify the steps undertaken to change some question weights – in order to make them correspond better to current economic thinking, and to make question scores easily comparable. Chapter 2 also provides a brief summary of current literature on survey design and implementation, and presents some methodological issues of particular concern, such as conflicting respondents' answers, or equal question weights. Our main purpose would be to lay out the main tool of gathering our legal data, and to present an account of its strengths and drawbacks. We will also argue that there is no unique way of aggregating the legal survey data – our main criterion for weighting the data – in contrast to prior uses of the same data – would be existing economic theoretical and empirical work, and some internationally-accepted standards on financial laws (such as those of the Basle Core Principles of Bank Supervision (1997)).

After the discussion of the methodology in Chapter 2, I present the core thematic chapters of the dissertation. Chapter 3's main aim is to investigate whether securities laws and their enforcement – as perceived by the lawyers respondents to the LIS – affected stock market development in 1999 and thereafter. In order to answer the above question, I shall test whether these laws, governing securities markets, and in operation in 1999, and in particular the quality of their enforcement, have any significant bearing upon the volumes of equity finance and stock market turnover in around 20 transition economies. I use a cross-section of relevant aggregate economic data and indices of securities laws' perceived extent and perceived enforcement based on the survey. The main novelty from prior versions of this work is that I utilise disaggregated indices – such as indices of disclosure requirements, or

indices of regulation of securities market intermediaries – and place less emphasis on the concepts of legal extensiveness and legal effectiveness, even though I still maintain this categorical distinction between LIS questions.

An important objective of Chapter 3 is to test newly-available empirical evidence by La Porta et al. (2003) that securities laws matter for stock market development, and that disclosure rules and liability rules, which support private enforcement mechanisms, rather than powerful public regulation of securities markets (i.e. the public enforcement view), are associated with higher market capitalisation, turnover and other indicators of liquidity, depth and efficiency. The La Porta et al. (2003) data sample do not cover the transition economies, so it is worthwhile to expand their sample to these countries. Furthermore, the LIS and the analysis in the dissertation goes into more detail in some of the aspects of securities laws that they consider. The latter feature also enables us to compare securities regulation and legislation – albeit as perceived by the LIS respondents – in two of the advanced transition economies – Poland and the Czech Republic in the mid- to late-1990s, and to compare our findings with other studies of the same, e.g. Glaeser et al. (2001).

Some transition economists, e.g. Berglof and Bolton (2002), have argued that banking markets may be more important for the transition economies than securities markets. Chapter 4 studies the impact of banking law and its enforcement – again as perceived by the responses to the Banking section of the LIS questionnaire – upon the share of credit to the private sector in GDP, the liquid liabilities of the domestic bank and non-bank financial intermediaries and the penetration of foreign banks. The main idea behind this chapter is to assess different theories of financial regulation and recent evidence that powerful supervision of banks, e.g. Barth et al. (2004), is associated with worse rather than better banking industry performance. The motivation for this chapter is also to try explaining the low volumes of bank finance, and obstacles to finance perceived by firms across transition economies, e.g.

Pistor et al. (2000), Fries et al. (2002).

As in Chapter 3, I rely on disaggregated indices of banking law and its enforcement, and test for their effect upon bank development, measured in a variety of ways. Suitable control variables are employed in the regression estimations, controlling for degree of competition in the domestic banking sector, for availability of information on borrowers, and for macroeconomic stability.

In both Chapter 3 and Chapter 4, which share a common theme, I conduct a series of robustness checks aimed at overcoming estimation problems, typical of cross-country regression analysis – such as endogeneity, multi-collinearity and omitted variable bias. One set of these checks involve running instrumental variables (IV) regressions, which correct for endogenous legal and financial development variables.

Transition economists have pointed out that foreign direct investment (FDI) has been a substitute for bank or capital market-raised finance by firms in transition. Indeed, estimates reveal that FDI flows have accounted for about half of gross fixed capital formation in several advanced transition economies, which have been able to attract a large share of total FDI inflows to the region. Therefore, firms in transition, which are finance-constrained, can rely on foreign partners and owners to inject funds and restructure.

Foreign direct investment is considered an important factor in the process of economic transition. It is argued that the transitional economies of Central and Eastern Europe and the former Soviet Union can benefit directly from FDI inflows in terms of higher employment and capital stock, and indirectly, as a result of technology transfer, introduction of new management and labour skills, and better marketing and distribution. FDI is also regarded as being complementary to local industry by creating backward linkages to local suppliers, and in this way leading to benefits to other local firms, such as those in the upstream industry. This in itself can spread to the local downstream firms, which due to the entry of a multinational firm

would initially be exposed to stronger competition. As a result of the possibility of FDI acting both as a substitute for the local downstream industry and as a complement to the local upstream industry, and depending on the magnitude of these effects, it can be shown that FDI can lead to growth of local industry[2].

The past several years – after the first decade of transition – have produced several papers which evaluate the impact of FDI in transition economies. The evidence is not very conclusive – while most studies, e.g. Resmini (2000), Konings (2001), Djankov and Hoekman (2000), Yudaeva et al. (2003), find that foreign-owned firms are more productive efficient than their domestic counterparts, the results generally point to either no effects, or negative spillover effects on other domestic firms – both within the same industry, and outside. Nevertheless, most studies concur that benefits can be generated if labour skills improve.

Despite the numerous benefits of FDI, some transition economies seem to have attracted much less FDI than others. What are the reasons for this? Which are the key determinants of FDI in the region? Does the legal and regulatory environment exert any influence on the decision of foreign investors to enter these markets? These are the main questions, which Chapter 5 aims to address. My initial hypothesis is that both commercial law enforcement and the contract enforceability environment will affect the willingness of foreign entrepreneurs to invest in these markets. This is in line with previous case studies and investor surveys, in which property rights protection and legal factors are cited among the main obstacles to high FDI inflows in transition, as well as with more recent econometric work, performed on transition countries, e.g. Bevan et al. (2001), and other samples of countries, e.g. Globerman and Shapiro (2002).

Unlike the analysis of Chapters 3 and 4, which employ the legal data from the Financial Markets section of the LIS, Chapter 5 utilises data from the so-called General

[2]For a theoretical model of the effects of FDI on local firms in the same industry see Markusen and Venables (1999).

Commercial Law Effectiveness section of the survey[3]. I again employ disaggregated measures of the contract enforcement environment – such as confidence in the work of the courts; legal drafting and dissemination of new laws on commercial activity; regulation of judicial process, and notably presence of litigants' rights of appeal and judicial review of government decisions; and perceptions about court performance in terms of speed, fairness and cost. Importantly, the survey also gathered estimates of the duration of a standard debt collection case in a first-instance trial court, and duration of execution of a first-instance judgment.

Apart from enabling us to see which institutional features affect FDI flows – something which the related literature is still attempting to determine – the study also relates to recent contributions to the institutional economics literature, which aims to understand whether private contracting institutions, guaranteeing the rights of private parties in disputes with other private parties; or property rights institutions, guaranteeing the rights of private parties versus the government, matter most for economic and financial development, e.g. Acemoglu and Johnson (2003). My study presents evidence that foreign investors are primarily concerned with property rights institutions – i.e. with guarantees that the courts will uphold their contractual and property interests in disputes with the government. Good property rights institutions reduce the risk of expropriation.

Notably, the dissertation makes several contributions: the original paper, which eventually split into Chapters 3 and 4, on Law and Finance in Transition Economies was one of the first attempts to estimate the impact of financial, legal and regulatory factors over the volume of private sector credit, and the size and volume of stock market activity, for transition countries, using the La Porta et al. (1997) methodology. As mentioned above, Chapter 3 expands the La Porta et al. (2003) sample

[3]Although originally classified as a section with only effectiveness-related questions, a careful analysis of the questions in this section reveals that some do have elements close to extent of the law rather than its enforcement.

to transition economies, and goes deeper into further detail in some aspects of securities law. Chapter 4 provides a robustness check for some of the data gathered by Barth et al. (2001) – they built a comprehensive data on bank regulation and supervision across over 100 countries, and used these data in Barth et al. (2004). Chapter 4 is a critique of their work, showing that measurement of some of the supervisory variables is highly uncertain, and finding that – at least in transition economies – some of their results on the detriment of powerful regulators may not necessarily hold. Finally, Chapter 5 investigates whether the contract enforcement environment, as measured by disaggregated indices of law dissemination, confidence in the courts and rights of appeal, among others, plays a significant role in explaining cumulative flows of FDI over 1999-2002 alongside standard variables used in the related literature. Thus, it provides valuable empirical support for the largely anecdotal evidence, e.g. Lankes and Venables (1996), Thornton and Mikheeva (1996), and more recent econometric evidence on the role of legal institutions for FDI in transition, e.g. Garibaldi et al. (2001), Bevan and Estrin (2000) and Bevan et al. (2001).

Some of the research on which the dissertation is based has been published. The author's work on the EBRD Legal Indicator Survey has led to contributions to the Annex on Legal Reform in the 1998 and 1999 EBRD Transition Reports, and to a presentation of the financial law dataset in an article (joint with Anita Ramasastry) in Law in Transition (1999). Further work on the commercial law section of the Legal Indicator Survey has led to papers on corporate governance and insolvency in transition, also published in Law in Transition (1999 and 2000). The work in the dissertation also fits well into the author's subsequent research at the World Bank on judicial efficiency around the world, one of the background studies for the 2002 World Bank World Development Report, as well as work on contract enforcement and co-authorship of the chapter of "Enforcing Contracts" in the World Bank report

on Doing Business in 2004: Understanding Regulation. Recent work by the author has also led to a World Bank publication on "Building Market Institutions in South Eastern Europe", World Bank (2004).

Chapter 2

Methodology of the Legal Indicator Survey

2.1 Introduction

The new institutional economics literature uses two main methodological approaches to examine the economic effect of law and legal enforcement across countries. First, it is possible to review the laws on the books and to codify existent legal norms and derive corresponding measures of what laws on the books represent. For example, in La Porta et al. (1997) shareholder and creditor rights are measured in this manner, first by identifying several key variables, (which taken together give a fairly good measure of the degree of protection of shareholder and creditor rights), and then by matching these variables with provisions in the law. They then construct corresponding legal indices, noting 1 if a certain provision is in the law, and 0 if such provision is omitted from the law. The approach is simple, straightforward, easy to use and to understand, and methodologically sound, since it builds on existent economic theory about the underlying economic variables, such as shareholder and creditor rights in this example. The same approach is also used in Pistor et

al. (2000) when measuring the protection of shareholders and creditors in the transition economies. In this instance, the authors utilize the La Porta et al. (1997) methodology by using the same methodology for shareholder and creditor rights in the transition economies, but add on to the two indices some additional variables, which are matched with corresponding legal provisions. An extensive review of the laws in the transition countries is made, and for each country each variable, from which the indices of shareholder and creditor rights are constructed, is coded as 1 or 0, depending on whether or not there exists a legal provision which supports it.

Second, it is also possible to use various surveys to measure perceptions of practising lawyers, judges, and businessmen at large, about how good the laws and legal enforcement in a given jurisdiction are. The latter survey approach is not limited to examining legal conditions and enforcement only, but is also widely used to measure various aspects of the business environment such as enterprise performance, corruption, bribery, unofficial payments, competition, etc. Indeed, various surveys utilizing perception-based data have been in use for some time in the economic literature, e.g. the corruption indicators of Transparency International or the World Competitiveness Report are both based on surveys of business community professionals, and therefore reflect subjective individual opinions.

In addition, survey-based measures of legal enforcement are used both in the study by La Porta et al. (1997) and by Pistor et al. (2000). Since the focus and thrust of the Pistor et al. article is precisely on the priority of legal enforcement over law on the books, it is important to stress that methodologically the authors use a sum of three separate survey-based proxies of how good legal enforcement of shareholder and creditor rights may be (their variable is called Legal Effectiveness, but should not be confused with the legal effectiveness measures in this dissertation), where the surveys are not run by the authors, but obtained from three external sources.

Recently there has been a new wave of studies based on institutional survey indices. For example, Djankov et al. (2003a) entirely rely on survey-based measures of contract enforcement across 109 countries worldwide. The survey questionnaire, in this case, was designed to follow the exact procedures which would be followed by creditors to collect a bounced check, and to evict a non-paying tenant, through the courts. The survey was conducted with the cooperation of Lex Mundi and Lex Africa law firms, and one law firm in each of the 109 countries was chosen to prepare the survey answers. Two lawyers in each law firms worked on the survey, and the answers were verified by one of the partners. The main variables, whose function is to measure the efficiency of contract enforcement, are the number of procedures mandated by law through which the parties to the case and the judge must go; the expected duration of the case in a first-instance court, and the expected legal costs of procedure. Again, lawyers give opinions on each of these variables, and their answers are used in constructing each of these indicators. Regardless of the strict factual and procedural assumptions on which the assumed case is built, the Lex Mundi survey also contains an element of lawyers' opinions. Yet, the data are shown to be consistent with other measures of judicial efficiency, and recent updates of the survey relating to a larger debt claim provide additional consistency checks.

Another survey instrument, which has gained popularity among researchers working on transition economies, is the Business Environment and Enterprise Performance Survey (BEEPS); this was conducted for the first time in the summer of 1999, and re-run for a second time in the summer of 2002, among the transition economies of Central and Eastern Europe and the CIS countries. This is a survey of enterprise managers, rather than lawyers, though the principles of the survey are the same. Again, the answers reflect individual opinions about various aspects of the investment climate, among them how fair and incorrupt court enforcement of contracts is, as well as how well the enterprise performs. The derived indicators are

necessarily proxies of the underlying economic variable being measured.

Finally, surveys of legal practitioners have recently been utilised in large cross-country studies, aimed at generating comparative data on registration procedures (following the methodology of Djankov et al. (2002), contract enforcement (following the methodology of Djankov et al. (2003)), bankruptcy proceedings (in co-operation with the American Bar Association), labour regulations (following the methodology of Botero et al. (2004)), and secured credit transactions (following La Porta et al. (1997)). These are the Doing Business data (World Bank (2004)). Typically, a standard detailed questionnaire is sent to one law firm in over 130 countries, and lawyers are asked to fill it in. The data is then coded and post-coding interactions with the survey respondent are usually undertaken to explain unclear answers and confirm interpretations. These data have gained popularity, and are being utilised increasingly in cross-country studies related to financial market development and the role of institutions, among others, e.g. Acemoglu and Johnson (2003), Beck et al. (2003b), Qian and Strahan (2004).

This chapter will provide a description of the methodology used to evaluate the quality and enforcement of investor protection laws in our sample of transition economies. Our main legal variables, which would be used in the analysis in subsequent chapters, are derived from the European Bank for Reconstruction and Development (EBRD) Legal Indicator Survey (LIS), run by the General Counsel Office of the EBRD since 1997; therefore we will pay due attention to the use of survey-based legal indicators, their attractions and limitations.

The chapter is organized as follows. We discuss the use of surveys in measuring economic outcomes at some length in section 2.2. Section 2.3 compares the legal indicators in the Transition Report 1999 and those reported and used in this thesis. Special attention is paid to the two set of weights used for aggregating the legal variables in the Transition Report and in the thesis. Consistency checks, and pro-

cedures to clean the data are also outlined in this section. Section 2.4 presents the theoretical background behind the construction and content of our legal variables on securities laws and banking laws. Section 2.5 examines alternative ways to weight and aggregate the data, and their effect upon our results. Section 2.6 concludes.

2.2 The Use of Surveys in Measuring Economic and Legal Outcomes - the Legal Indicator Survey

It is often said that designing a good survey questionnaire is an art[1]. Yet, the science of survey methodology and cognitive psychology sheds a lot of light on the survey process. What constitutes a good survey? What should social scientists do to construct better questionnaires? How do respondents arrive at the answers in the survey process? What cognitive processes determine the choice of a particular answer, and how does this affect the answers to subsequent or earlier survey questions? How do expert survey responses differ from general, non-expert responses?

All these questions are discussed extensively in "Thinking About Answers" by Sudman, Bradburn and Schwarz (1996). The book summarizes existing research on the interactions between cognitive psychology and survey questionnaire design. The authors start out from the premise that a survey is a social encounter, a special type of conversation between interviewer and interviewee, and governed by the same social norms which govern relations between strangers. Furthermore, a survey questionnaire is delivered to respondents through language, and the ways in which people comprehend speech or written material affect their answers. For instance, question wording affects, among other things, the meaning of the question. What is

[1]See Recanatini, Wallsten and Xu (2000) for a comprehensive review of different firm-level surveys, and the main problems with the design of survey questionnaires.

more, related research indicates that the most important part of the survey process is the wording of each question. In this regard, question wording and how it affects comprehension, and whether or not the inferred meaning of the question differs from the meaning actually intended by the survey author, would be crucial in survey design. Small changes in wording could alter the meaning fundamentally, whereas extensive wording changes could change the meaning slightly. An early experiment from the 1940s is quoted by the authors, whereby matched samples of respondents were asked one of two questions: "Do you think the United States should allow public speeches against democracy?" or "Do you think the United States should forbid public speeches against democracy?" When the question referred to "allowing", 21% of respondents were in favor of free speech. However, when the question was about "forbidding", 39% of respondents supported free speech. The authors point out that a theory of survey response effects would be able to explain these differences. Finally, it is necessary to understand that respondents' answers to survey questionnaires are the result of complex cognitive processes, such as memory retrieval and information processing; therefore survey methods are inherently linked to cognitive psychology.

To begin with, from a cognitive perspective, answering a survey question requires the respondent to accomplish several distinct tasks. These include interpreting the question, retrieving information, forming an opinion, formatting a response, and editing this response. These are the main psychological stages of the process, which begins when a question is asked and ends with the respondent's answer to that question.

The main issue in question comprehension is to ensure that the respondent's understanding and interpretation of the question matches the content which the researcher had in mind. This involves understanding both the literal meaning of the question and the pragmatic meaning, i.e. to infer the questioner's intention in ask-

ing the question. It is argued that since lexical ambiguities are present in language, both spoken and written, and there exist idiosyncratic differences in word meanings across regions or cultures, it is often unclear what a particular word or term means to survey respondents. For example, it was found that respondents had in mind nine different meanings about the term "energy crisis". Similarly, respondents also differed in their interpretation of the term "big government". These differences in meaning are exacerbated when comparative surveys, such as the Legal Indicator Survey in our case, are conducted across countries. Therefore, in designing cross-country surveys researchers must be careful to avoid ambiguous terms, and try to word questions in the same way across languages. However, to the extent that the LIS is a survey of experts, and the questions are highly specific and require systematic knowledge of local laws, the problems inherent in generic surveys, such as various opinion polls, political surveys, etc., are less acute. Furthermore, all the LIS respondent lawyers had a good working knowledge of English, and the survey was administered in English in most countries. Since a lot of the legal jargon and terminology is highly specific and the lawyers we surveyed were identified mainly through the EBRD's local contacts, and constitute leading law firms which work with many international clients, survey question comprehension and interpretation are not considered a serious issue. It must be noted that the survey was administered in the Russian language across the CIS countries, and the translation was made in-house, using professional EBRD translators, proficient in legal and economic terminology.

It has been demonstrated, however, that question comprehension can depend on the response alternatives provided by the survey designers. For example, rating scales have been found to affect the inferred meaning of the question. Using two different rating scales for the same question could yield different responses. To illustrate this point, in an experiment, German adults were asked "How successful would you say you have been in life?" The question was accompanied by an 11-

point rating scale, ranging from "not at all successful" to "extremely successful". However, in one case the numeric values of the rating scale ranged from 0 ("not at all successful") to 10 ("extremely successful"), whereas in the other case the same scale had numeric values from -5 ("not at all successful") to +5 ("extremely successful"). Almost three times more respondents (34% vs. 13%) endorsed a value between 0 and 5 on the 0 to 10 scale compared to the formally equivalent values between -5 and 0 on the -5 to +5 scale. Therefore, respondents appear to have inferred differential interpretations of "not at all successful" from the scale. Subsequent experiments confirmed that when this answer choice was assigned the value of 0 on the scale, it was interpreted as lack of success. When the same answer choice was combined with a numeric scale value of -5 and the scale offered 0 as the midpoint, the same term was interpreted by respondents as presence of failure.

In a similar experiment, respondents have been asked to provide behavioral frequency reports on a rating scale ranging from "rarely" to "frequently". In one case the numeric scale used assigned to the verbal label "rarely" the value of 0, whereas in the other case: the same scale assigned to the label "rarely" the value of 1. It was found that respondents assigned higher frequency ratings when "rarely" was coded as 0 rather than 1, since the value of 0 made them interpret "rarely" as "never", thereby requiring the assignment of higher values for a given behavioral frequency.

These features of survey questionnaires indicate that respondents use response alternatives in interpreting the meaning of survey questions. The dependence of answers on the numeric scale given for responses is one example how this can happen. Therefore, this poses particular problems in survey design and is considered one of the main limitations of survey methods.

How important is this limitation for our survey? First, the majority of questions in the LIS have a format of responses of Yes, No, Unclear. Rating scales were introduced in the 1999 version of the survey with regards to effectiveness-related

questions. They all share a common 5-point rating scale of 1 to 5, in increments of 1, and provide frequency reports. Thus, the rating scale assigns the value of 1 to "Never", and the value of 5 to "Almost always". We have not conducted any robustness checks to see whether assigning different numeric values to the same scale, for instance giving "never" the value of 0, would change the answers to these questions – such robustness tests may be desirable, but were not feasible since the data was generated in one round and no pilot questionnaire was implemented (the questionnaire was largely a repeat of the 1998 and 1997 ones). If a change in numerical scale values were found to affect answers, distribution of the answer points could be affected. Thus, if respondents interpret a value of 1 to actually mean "rarely" (the next verbal label on the scale) rather than "never", this could lead to the respondent's assignment of lower values to a given behavioral frequency. So, the effectiveness scores might be underestimated. Unfortunately, we have no way of judging this at this point.

Another problem of survey methods is the so-called context effect. One contextual bias arises from the ordering of questions in a survey. This is known in the survey methodology literature as question order effects. People attempt to provide answers consistent with the answers already given in the survey. Prior questions may bring certain memories or attitudes, which then influence later answers. In one study, respondents were asked two questions: "How satisfied are you with the current U.S. health care system?" and "How satisfied are you with your health insurance plan?". The answers to the latter turned out to be independent of the order in which these questions were asked. However, the answer to the former exhibited strong order effects. When the question about the U.S. health care system was asked first, 39.6% of respondents reported being somewhat or very satisfied with it; when the question about individual health plans was asked first, only 26.4% of respondents reported being somewhat or very satisfied with the U.S. health care

system. Apparently, having just reported on their own health plans, with which most respondents were satisfied, respondents then went on to interpret the question about the quality of the U.S. health care system, as meaning: "Aside from your own health insurance, how satisfied are you with the U.S. health care system in general?", which led to lower reported levels of satisfaction.

Order effects, resulting from the sequencing of questions, are not only limited to order effects of preceding questions. In self-administered questionnaires such as written surveys sent by mail, without an interviewer, the respondent might skip through questions and answer later questions before actually answering earlier ones. Thus, order effects of this type could also occur, if the answers to later questions then affects the interpretation of the earlier question. In any case, from a theoretical point of view, question order is merely a technical aspect of the survey questionnaire and not a relevant psychological variable. We will get back to the context effects and how they are generated in the cognitive processes involved in answering a survey.

Let us now go back to the five stages of a respondent's processing of information in a survey situation. We have so far focused on comprehension. The next stage of the process is a respondent's recalling or computing a judgment. Once they have determined what the survey researcher is actually asking, respondents have to decide whether or not they have the answer stored in their memory, and would either need to recall this answer (i.e. recalling a judgment), or would have to come up with a judgment on the spot (i.e. computing a judgment). Usually, respondents would have to compute a judgment. In attitudinal questions even if an opinion has been formed earlier and is retrieved from memory, the existing opinion might not exactly match the particular aspect sought in the survey question. In behavioral questions respondents are unlikely to have an answer stored in memory. At the very least, they would have to determine whether relevant behavioral instances fit the period specified, etc. Thus, most survey answers record judgments generated on the spot in

the specific context of the survey. Normally, this context dependency of respondent's answers is explained by the fact that humans are "cognitive misers", in other words when asked to form a judgment, individuals do not normally retrieve all potentially relevant information from memory, but rather truncate the search process as soon as sufficient information has come to mind to form a judgment. In addition, searching memory takes time, and given the time constraints of many survey processes, such search truncation usually happens early on. In order to induce respondents to search their memory extensively, they must be induced to do so by certain stimuli, e.g. if the answers have important personal consequences.

Information plays a crucial role in the process of computing a judgment. Information, which is readily accessible, such as information used to answer a preceding question, would likely come to mind when a related question is being asked. One needs to distinguish between "temporarily accessible" information, and "chronically accessible" information. The former refers to information, which has been brought to the respondent's attention by virtue of the same information being used to answer a preceding question. The latter refers to information, which comes to the respondent's attention by virtue of the frequency of its use in general, outside the survey process. For example, a respondent who is concerned about unemployment, might often think about this issue, and would resort to "chronically accessible" information when asked a question on this issue. Or, as in the Legal Indicator Survey, a respondent lawyer, by virtue of his everyday work, would know and think about the particular legal questions being asked, thus likely resorting to "chronically accessible" information when forming a judgment in the survey process. In other words, "temporary accessibility" is mainly determined by questionnaire design, while "chronic accessibility" is mainly determined by respondents' characteristics. Finally, a given piece of information is proportionately more accessible in memory if it is part of a larger knowledge structure, e.g. an encompassing knowledge of the overall

legal system and a law degree might make information about bankruptcy laws more accessible.

Once a judgment has been formed by a survey respondent, the next stage of the process is concerned with how this judgment would be formatted to give a particular response. Survey designers do not usually allow the respondent to answer questions in their own words. Rather, they provide a template of response alternatives, from which the respondent must choose. In so doing, the answers are necessarily affected by the response alternatives provided. However, the impact of response alternatives is not only limited to the formatting stage, but also to the other stages of the survey-answering process. For example, in categorical scales which offer a number of discrete opinions, it has been demonstrated that when respondents cannot identify the response which reflects their judgment, they are unlikely to report it, even if a generic category of "Other" is provided by the survey designers. Or in the case of questions with rating scales, the range of the scale might affect question comprehension as well as respondents' judgmental strategy. When rating scales are used, respondents usually use the most extreme stimuli to anchor the end points of the rating scale. In addition, if the number of stimuli to be rated is large enough, respondents use all categories of the rating scale about equally often.

The final stage of the survey-answering process is the editing of the response. Respondents might want to edit their response to the survey question before communicating it for reasons of social desirability or self-presentation. This effect, however, is shown to be more pronounced in face-to-face interviews, and less so in self-administered surveys. Since the Legal Indicator Survey is of the second type, the problem of providing an answer which makes the respondent look good or is "politically correct" is less of an issue.

The methodology employed in the Legal Indicator Survey is based on hypotheses derived in economic theory. To avoid generality, it focuses on narrow topics - national

laws and regulations on banking and stock markets, laws related to bankruptcy, corporate governance and secured transactions, as well as perceptions about the general enforceability of contracts and the performance of the courts. It is factual, as questions elicit responses on the laws in force and how a procedure is done in practice, not how the respondent would evaluate its effectiveness. The questionnaire asks about highly specific aspects of the respective laws, regulations and procedures under detailed assumptions, to ensure that the facts and meaning are comparable across countries and that the respondents envision the same process as they complete the surveys.

By targeting lawyers who are experts in the particular area, the Legal Indicator Survey ensures that only those with detailed professional knowledge and experience provide the data. The methodology also allows for repeat interactions during the research process, to eliminate possible misinterpretations in questions[2]. Furthermore, the survey builds on local knowledge - without exception, indicators are based on answers by local respondents in the transition countries, who practise law in the jurisdictions we study and are familiar with changes in the law as well as with judicial and administrative procedures to make use of these laws.

[2]Although desirable, such interactions usually occurred once a year – the same law firms were usually asked to complete the LIS.

2.3 How do the legal data in the thesis differ from the legal data in the EBRD Transition Reports?

2.3.1 Subjective Legal Expert Opinions

The Legal Indicator Survey data were initially used for the EBRD country rankings on commercial law extensiveness and effectiveness and financial law extensiveness and effectiveness as published in the 1999 Transition Report. The country rankings use a scale from 1 (lowest) to 4* (highest), increasing in increments of 1, but also using add-on pluses or minuses. The underlying raw survey data used to derive these scores are the same data used in this thesis. Two important qualifications are in order, however. First, the official EBRD scoring reflects the survey outcomes, but also takes into account expert opinions, notably EBRD in-house lawyers, who have usually been consulted and asked to review the country scores before these are released for publication. To the knowledge of the thesis author, such consultations have happened on several occasions and have led to revisions in the 1 to 4* scores given to particular countries. In contrast, the data presented and used in the thesis do not include any external judgments, and therefore reflect only and exclusively the opinion of the survey respondents.

2.3.2 Missing Answers

Second, extensive consistency checks were performed on the data for the purposes of the author's research and work on the thesis. In the process, a number of errors were discovered, at a much later stage than the time of publication of the 1999 Transition Report (November 1999). Although these were limited, we are presenting a list of all recorded omissions, which lead to discrepancies in the scores given in the Transition

Report, and the scores in the thesis. One example of this kind is Georgia, which was represented in the 1999 survey by three law firms. One of them, however, did not provide answers to the Banking part of the questionnaire. Nevertheless, the official Georgia rankings did count these missing answers in as 0 scores, and after averaging over 3 rather than 2 respondent answers, produced a downward bias in the Georgian banking and overall financial scores. Subsequently, this error was revealed and corrected, thereby raising Georgia's banking and overall financial scores.

A recent review of the LIS data has also revealed that in many instances throughout the answer entries for various countries missing questions or sub-question answers were not treated as missing observations but rather counted as zero scores. This used to generate a downward bias in the country scores across the sample and across all sections of the survey. This bias was particularly pronounced in countries with few survey entries – such as Armenia, Belarus, Georgia. A correct treatment would be to exclude these missing answers, where they are truly missing rather than non-applicable, and this has been performed for all the data used in the thesis. The correction for missing question answers therefore produced a generally upward shift in the country scores.

2.3.3 Differences in Question Weights

Third, the scores published in the 1999 Transition Report are based on different question weights. In an attempt to eliminate problems and peer review queries regarding arbitrary weights, we have treated each survey question equally, assigning a weight of 1 to each. This again result in differences in scores as given in the thesis and previously published. We will address the issue of weighting at great length when we explain the economic concepts behind the survey variables. Here we present the set of weights used for the scores which appear in the Transition Report 1999 on one hand, and the set of weights used for the scores in the thesis on the

other, and illustrate how each set affects country scores on a given indicator.

The distinction between extensiveness and effectiveness questions and sub-questions is maintained for most questions, i.e. questions and sub-questions categorized as extensiveness-related for the scores in the Transition Report, are normally also categorized as extensiveness-related for the scores used in this thesis.[3] Again, given their central place in the thesis, the concepts of legal extensiveness and effectiveness, as employed in this thesis, are reviewed briefly in a later section.

Using weights of 1 for all survey questions has enabled us to cross-check the entire database for other errors in coding the answers. We also tabulated individual question scores for the purposes of the thesis – something which was not done in Transition Report 1999.

2.3.4 Coding Errors and Logical/Internal Inconsistencies

Finally, the thesis data were additionally cleaned for some typical survey inconsistencies. We must stress, however, that such incidences were very few and had minor effects on the legal variables in most cases. Nevertheless, we will provide examples of when and how such survey answer inconsistencies have arisen, and the procedures used to eliminate these inconsistencies. A section will be devoted to this end. Coding errors, such as missing values coded as zero values were identified in the last cleaning procedure, and the data were corrected for them as well.

Summing up, there are four major reasons why the legal variables, as shown and used in this thesis, deviate from the same variables as given in the 1999 Transition Report and associated EBRD publications, such as Law in Transition. First, the legal data published by the EBRD incorporates in-house opinions and judgments, which augment the survey raw scores to arrive at the legal scores on a numeric scale from 1 to 4*. We do not allow for outside subjective judgments to play a

[3]Where changes occur, we highlight them and explain the rationale for them.

role. Second, discrepancies may be due to certain consistency errors in aggregating the data, which have been corrected in the scores reported in this thesis. Third, the EBRD published data were based on a different set of question weights. For a variety of reasons, to be taken up and analysed later, we have chosen to employ equal weights. The issue, however, is still open for discussion, and robustness checks can be performed actually employing both, or even a third, sets of weights. Finally, logical inconsistencies in the survey process and in the data coding, which were not corrected in the EBRD Transition Report scores, have been eliminated in a systematic cleaning operation by the thesis author.

A thorough discussion of the differences in the LIS legal data used in the thesis and in official EBRD publications in Appendices 2.A to 2.D[4]. The appendices go through a very detailed explanation about observed differences, particularly focusing on changes in weights. We present Table 2.1, showing the 1 to 4* overall financial legal extensiveness scores reported in the 1999 Transition Report, the underlying raw country scores for these 1 to 4* scores (before further judgmental manipulations), and the country scores used in the thesis. The countries are ranked by their Transition Report index score. Detailed explanations are offered in the appendices in accounting for all the differences. Table 2.2 then shows the number of law firms per country, which provided answers to the three different sections of the Legal Indicator Survey used in the thesis (Banking Law, Securities Law and Legal Enforcement). Furthermore, we also map the time line of the extensive work, performed to check

[4]We must stress, however, that the numbers given in these appendices have been further changed due to changes in definitions, variable re-classifications, and subsequent discovery of missing values coded initially as zeros. These events have led to further changes. Since in this thesis, we employ more disaggregated indices, based on individual questions, in a sense some of the calculations in Appendices 2.A to 2.D are somewhat old at this stage. They do illustrate an important point about the changes in scores used in the previous version of the thesis and published EBRD legal indicators based on the LIS.

and clean the data, used in this thesis (Table 2.3).

2.4 Theoretical Background for Legal Variables and Question Weights

Having outlined the main sources of differences between the scores shown in the thesis and the published scores in some EBRD publications, and provided a detailed explanation for these differences in terms of weight changes in the appendices, let us now turn to the essential question of what the survey is measuring and how the legal variables reflect current theoretical and empirical knowledge about bank and stock market regulations, and contract enforcement, which are the sections whose data is utilised in later chapters[5]. Since the Legal Indicator Survey captures lawyers' opinions on each of these aspects of laws and regulations and their application, we will consider each of them in succession. Our main objective in this section is to explain the theoretical economic thinking about each of these institutions, say stock market laws and regulations, and based on this thinking, to justify the particular questions asked in the survey, the weights awarded to their answers, and the use of legal extensiveness and effectiveness as separate proxies for the quality of legal protection. We begin with a look into securities market regulation.

2.4.1 Securities Markets Laws and Regulations

There is a growing body of theoretical and empirical research, which seeks to answer the question whether or not securities laws matter for stock market development. One view, the older one, is that securities law does not matter. Following Coase

[5]We have also reviewed and cleaned systematically the Bankruptcy and Company Law sections of the LIS, as well as a substantial proportion of the Pledge Law section, but do not employ those data in the thesis.

Table 2.1: Differences in Scores: Extensiveness of Banking Laws, 1999

Country	TR99 (1-4*)	TR99 (1-100)	Thesis (1-100)
Estonia	4	64.52	64.61
Hungary	4	64.57	67.95
Moldova	4	71.29	73.69
Poland	4	60.04	63.13
Slovak Republic	4	60.46	62.89
Czech Republic	3+	59.39	62.23
Slovenia	3+	62.07	59.31
Albania	3	53.51	58.92
Armenia	3	57.34	56.67
Bulgaria	3	62.80	65.98
Croatia	3	54.75	56.68
FYR Macedonia	3	53.47	57.94
Kazakhstan	3	59.58	63.02
Latvia	3	56.99	58.44
Romania	3	57.80	61.68
Russian Federation	3	50.66	51.26
Kyrgyzstan	3-	54.60	59.69
Lithuania	3-	52.80	54.47
Azerbaijan	2	52.85	55.81
Belarus	2	39.56	39.25
Ukraine	2	48.14	48.29
Uzbekistan	2	57.56	59.17
Georgia	1	30.59	48.96

Source: EBRD Transition Reports, EBRD Legal Indicator Survey raw data and author's compilations.

Table 2.2: Number of Surveyed Law Firms Per Country, 1999 Legal Indicator Survey

Country	Banking Law	Securities Law	Contract Enforcement
Albania	4	4	4
Armenia	1	1	2
Azerbaijan	3	3	3
Belarus	1	1	1
Bulgaria	16	16	16
Croatia	9	9	9
Czech Republic	13	13	14
Estonia	7	7	7
FYR Macedonia	3	3	3
Georgia	2	3	1
Hungary	13	13	13
Kazakhstan	5	5	5
Kyrgyzstan	3	3	3
Latvia	4	4	4
Lithuania	3	3	3
Moldova	4	4	3
Poland	7	7	7
Romania	6	6	6
Russian Federation	20	20	21
Slovak Republic	9	9	10
Slovenia	3	3	3
Ukraine	8	8	8
Uzbekistan	4	4	4

Source: EBRD Legal Indicator Survey, 1999

Table 2.3: Timeline of EBRD and author's work on the Legal Indicator Survey

Year	EBRD	Author
1997	Commercial law survey conducted and results reported in TR97	
June, July and August, 1998	Commercial law survey re-run with minor changes (new questions). A new survey instrument developed and launched: Financial Law Survey.	Involved in collecting and coding data, modifying coding template for Commercial Law Survey, and building a coding template file for Financial Law Survey (using Visual Basic programming).
September 1998	Results from both surveys appear in TR98.	Team work on preparing country scores for the TR.
April 1999	Results from Financial Law Survey appear in LiT.	Joint work on article.
May 1999		First version of paper on Law and Finance in Transition presented at Budapest workshop, using 1998 banking and stock market law data.
June, July 1999	Commercial and Financial Law Surveys combined in joint Legal Indicator Survey and administered to respondents. Modifications introduced in response alternatives for effectiveness questions: a 1 to 5 frequency rating scale adopted. Otherwise, same questions as in 1998 surveys.	Work on re-design of survey questions, and coding templates.

October 1999	Results on company law (corporate governance) published in LiT.	Work on LiT article.
November 1999		Law and Finance paper revised to use 1999 financial law data alongside 1998 data, and appears as a FMG working paper
February, March 2000	Article on insolvency laws in LiT.	Joint work on LiT 2000 article.
April 2000		Law and Finance paper submitted to journal.
March, May, June 2000		Law and Finance paper presented at international conferences
June, July 2000	Preliminary work on Legal Indicator Survey 2000. A new section on Concessions Law added to LIS.	Preliminary coding of available data, and development of a new coding template on Concessions Law.
February 2001		Revision of Law and Finance paper, and presentation at World Bank workshop. Suggested to use equal weights of questions.
October, November, December 2001		Revision of both Commercial and Financial law data; Systematic consistency checks performed and a cleaning operation complete.
January 2003 - February 2004		Entire legal dataset based on 1999 Legal Indicator Survey shown in thesis. Cleaning completed.

(1960) and Stigler (1964), the government's optimal policy is to do nothing regarding securities markets. When securities are issued, informational asymmetries arising between the issuers (or sellers) and investors (buyers) will be resolved through reputational mechanisms or general contract law norms, without the need for specific laws on securities markets. For example, under this view, when companies issue shares, they have every reason to provide truthful and accurate information about the company in order to extract a higher price for their shares. The incentives to do so are grounded in general contract and tort law as well as the concern for one's future reputation. Similarly, investors have every reason to find out more about the company, whose shares they intend to purchase. Their incentive is to invest in information-gathering so as to avoid being cheated by disreputable firms. To the extent that such incentives exist for both buyers and sellers of securities, the argument goes that securities law is unnecessary (since parties can contract around it) or may even be harmful in so far as it raises transactions costs.

The second view is that securities law matters, e.g. Glaeser, Johnson and Shleifer (2001), Black (2001). On this view reputational concerns, contract and tort law are not enough to preclude opportunistic behaviour by securities issuers. The payoffs from cheating are very high, as are also enforcement costs of private investors who have been cheated. To reduce such costs and opportunistic behaviour, the government can introduce a securities law, specifying how securities transactions should be conducted. Recent work has been very supportive of this latter view, e.g. La Porta et al. (2003).

Starting out from a theoretical perspective, let us assume a company tries to sell shares on the stock market for the first time, i.e. initiates an initial public offering (IPO). The company is trying to raise cash to finance its growing business operations. Previously, it used only internal funds and bank loans. Since the company is not known to investors at large, potential investors are required to invest some effort

in learning more about the company and its prospects. A problem of asymmetric information arises. The company knows more about the present value of its business than outside investors do. It might be tempted not to reveal some aspects of its business if it anticipates that they would turn investors away. It may be tempted to provide more favorable information in order to boost the price the investors would pay for its shares. How is this problem of asymmetric information going to be resolved? In the Coasian view, private contracting would ensure that the efficient outcome is achieved, assuming zero transaction/information costs. In the public enforcement view, private contracting would be insufficient, and the government needs to step in and institute a public securities agency and a securities law.

Aside from asymmetric information, a second problem which arises in this example is the fact that once shares have been sold to outside investors, is moral hazard. The company's insiders, such as managers and controlling shareholders, have an incentive to cheat outside investors out of some or all of the value of their investment. This could happen through self-dealing (transactions between a company and its insiders, or with another firm that the insiders control). It is possible that the insiders also engage in insider trading, or even commit outright theft. Since investors know ex-ante that such incentives exist, they may be less willing to buy a company's shares if they suspect that the insiders will cheat. How could this problem be mitigated? Again, in the private enforcement view, reputational concerns and general contract law will be sufficient to elicit honest behavior by insiders. In the public enforcement view, a specialized law which establishes procedural and disclosure requirements aimed at controlling self-dealing is needed.

What are the legal and institutional features which help resolve the information asymmetry between the company selling its shares and outside investors? On grounds of efficiency, the lowest cost provider of information about a security should collect and present this information, and be held accountable if this information is

wrong or misleading. Grossman and Hart (1980) present a theoretical model where the lowest-cost providers are the securities issuers, distributors and accountants. Therefore, an efficient system would provide these market players with incentives to collect and present truthful information to outside investors, and would hold them liable if they fail to do so. The relevant provisions of securities law which make this possible are disclosure requirements and liability rules. Both make it cheaper for investors to recover damages when information is wrong or omitted.

Black (2001) looks at this question in detail and identifies the following legal norms and institutions which counter the informational asymmetry on the one hand, and self-dealing by company insiders on the other: existence of effective regulators, courts and prosecutors; sufficient financial disclosure; reputational intermediaries operating in the securities market; well defined and requisite company and insider liability; securities market transparency; local culture and other relevant institutions. Appendix 2.E summarizes in a table what these laws and institutions entail.

We observe a lot of similarities in the laws and institutions aimed at controlling asymmetric information and self-dealing. However, some of the institutions outlined above are specifically targeting only one of the two problems facing securities issuers and investors. We will return to these pre-conditions in the next sub-section when we discuss how the Legal Indicator Survey in its Securities Law section provides information on some of these institutions.

In a recent paper La Porta, Lopez de Silanes and Shleifer (2003) examine securities laws in 49 countries worldwide and establish that private enforcement through disclosure and liability rules is associated with more developed securities markets, whereas public enforcement is mostly not. The authors look at private and public enforcement separately. They argue that disclosure requirements and liability rules are two crucial features of private enforcement. The authors conduct a survey of one law firm per country, and collect data on various aspects of securities laws. The

data are summarized in several key index measures of the variables of interest. For example, six proxies of the strength of disclosure requirements are constructed[6]. An index of disclosure requirements is the average of the six proxies. In addition to these specific disclosure requirements, it is common to have a requirement, whereby the prospectus needs to include all material information necessary to assess the value of the securities being offered. However, when bad news hit the company after it has issued securities, the question becomes whether this information was known or knowable to the issuer, distributor and/or accountant, and whether it is easy for investors to recover damages if information in the prospectus was misleading or omitted. La Porta et al. (2003) distinguish four different liability regimes[7].

In La Porta et al. (2003)'s analysis the sub-indices of disclosure and burden of proof are combined to give an index of private enforcement, and it is found that precisely this index is significantly associated with better securities market performance.

[6]These are whether a prospectus is delivered to investors in advance, before the securities issue; whether the company must disclose insiders' compensation, ownership by large shareholders, inside ownership, contracts outside the normal course of business and transactions with related parties.

[7]One possibility would be for the plaintiff to demonstrate that the issuer, distributor or accountant was negligent in leaving information out of the prospectus. In addition, under this regime the investor has to prove that he relied on the information given in the prospectus in their decision to invest (reliance) and that his losses are due to the information provided in the prospectus (causality). Under the second liability regime, plaintiffs need to prove gross negligence on the part of the issuer, distributor and /or accountant. Therefore, this regime is harder for plaintiffs than the first one. Under the third liability regime, plaintiffs must prove reliance and causality, but not negligence. Therefore, the burden of proof is lighter in this case. Finally, the fourth scenario calls for plaintiffs to merely prove that the information provided in the prospectus was misleading, without proving reliance on the prospectus to invest or causality between information provided and incurred losses. In the latter case the burden of proof shifts from plaintiff to defendant: the defendant must prove that he exercised due diligence in preparing the prospectus.

2.4.1.1 Disclosure Requirements and the Legal Indicator Survey

Let us now turn to the Securities Markets section of the Legal Indicator Survey. What information does the survey elicit from respondents, given the first problem of securities issuance, i.e. the problem of asymmetric information between issuers and investors? As we have seen above, disclosure of financial information, which enables potential investors to judge the health of the company and its future prospects is essential. One of the first things the survey section on Securities Markets asks about is disclosure and transparency. For example, six of the 29 questions in this section are concerned with how good and effective disclosure requirements are.

Thus, an extensiveness question Q5 asks whether publicly traded companies must provide timely and accurate financial results and other information to the public, and a related question, Q6, asks how often such information is in fact provided, thereby measuring the perceived effectiveness of the disclosure rule. Note that in this case the question refers to a situation after such securities have been issued. Two aspects of such information provision are sought: both that the information is factually correct and complete, i.e. there is no misleading or omitted information, and second, that it is provided to investors and the general public at large in a timely fashion, i.e. once every quarter, etc. As discussed earlier, one of the core pre-conditions for countering the information asymmetry involves good accounting and auditing rules designed to provide information useful to investors. Q7 attempts to measure exactly that. It asks the lawyers to tell us whether publicly-traded firms must use international accounting standards when preparing their financial statements. Use of international accounting standards is thought to be desirable, especially since the transition economies had no proper accounting standards to begin with. The next question, Q8, is about the transparency of securities transactions. It asks about the existence of a properly functioning clearance and settlement system for both shares

and bonds, assigning equal weights to both[8]. When such a system is in operation trades can be recorded and those records made available to investors. Black (2001) lists similar market transparency rules such as recording the time, quantity and price of trades as one of the core institutions to control asymmetric information. He comments that large investors often try to hide their transactions to reduce the price impact of their trades. Large stock exchanges, however, sometimes have the power to require that all trades be reported to them. More generally, however, the government needs to mandate prompt reporting of transactions and their entry into a single, consolidated source. Finally, Q8 and Q9 of the Securities Markets section deal with disclosure requirements prior to securities issue. One half of the question weight is assigned to an affirmative answer to the question whether filing of information with the Securities regulator before issuance is required by the law, and whether the information provided exceeds or falls short of that given in the issuing company's annual report. These parts arguably refer to the extensiveness of the law. Another half of the question weight of 1 is awarded to a mandatory filing of both a prospectus and financial statements, with the prospectus given a three times higher weight than financial statements, and both considered complements. The importance of the prospectus is discussed by both Black (2001) and La Porta et al. (2003). Financial statements can obviously augment the financial information provided in the prospectus. La Porta et al. (2003) stress the importance of delivery of the prospectus to investors, and Q9 focuses on delivery of the information (prospectus, financial statements and other) to the securities market regulator prior to issuance. That part of the question asking about the form of information disclosure was previously considered an effectiveness question. We choose to treat it as an extensiveness question since it relates to the provisions of the law regarding

[8]Here we maintain the internal question weights originally assigned by the EBRD Legal Transition Team to the survey answers. In most cases the original internal weights have been maintained in generating the legal indices used in the paper.

delivery of prospectus and financial statements rather than their enforcement. And finally, an effectiveness question, Q10, asks how often the regulator does in practice approve of the information disclosed before a securities issue.

While, the survey omits disclosure requirements regarding director compensation, ownership by large shareholders, insider ownership, etc. as coded by La Porta et al. (2003), it does focus on some of the crucial aspects of information disclosure aimed at mitigating asymmetric information between securities issuers and investors.

We average the six LIS questions on disclosure requirements to get a sub-index of Disclosure Rules (DISCL), and look at it in its aggregate as well as broken down into its extensiveness (DISCL_EXT) and effectiveness (DISCL_EFF) components.

2.4.1.2 Effective Supervision and Regulation of the Securities Market and the Legal Indicator Survey

As pointed out by Black (2001) and La Porta et al. (2003), it is essential to have honest, well-funded securities regulators, who have the expertise and budget to handle complex securities disclosure cases. Funding of securities regulators is often a big problem, particularly in developing countries. Very often the salaries are too low to retain qualified staff. La Porta et al. (2003) look at securities regulators as the main government agency or official authority charged with supervising the securities market, and thereby acting as the public enforcer of securities rules. Under the public enforcement view, even with a securities law, private enforcement incentives are not strong enough to elicit honest behavior from issuers, and therefore a public enforcer, e.g. a Securities Commission, is needed to make sure that the securities law is complied with. La Porta et al. (2003) argue that public enforcement could be beneficial when the enforcer is politically independent and focused on securities markets only; when it can introduce regulations of market participants; when it is well suited to elicit information from market participants, and finally when it has

the authority to impose sanctions on market participants. Each of these four aspects of public enforcement through a securities market regulator is carefully coded using their available data.

The securities markets section of the Legal Indicator Survey contains several questions which refer to the Securities Regulator. For example, the first 4 questions of this section, Q1 to Q4 are combined under the rubric of Supervision and Regulation. Of these, Q2 and Q3 are the most interesting. Q2 asks whether a government agency or an independent body exists and is in charge of securities markets regulation. An affirmative answer, regardless of the degree of independence of the Regulator, gets the full weight score of 1. Obviously, it makes a great difference if the regulator's staff members are appointed unilaterally by the government, or not; and how they can be dismissed – following due process, or unilaterally by the Executive branch of government. The survey does not allow us to fine-tune the degree of independence, but rather assumes that respondents know what an independent Regulator means. Q3 refers to the investigative powers of the Regulator — it asks respondents whether the Regulator has the mandate to conduct on-site examinations of securities issuers, presumably to investigate information provided with the offering documents. Whenever inaccurate information is provided by the issuers, accountants or underwriters, the question arises why such information was provided? Did the issuer, accountant or distributor have that information? Could they have had it? At what cost? Did the issuer hide relevant information from the accountant (auditor) and /or distributor? Finding the answers to all these questions is costly, and this is where the Regulator steps in. The Regulator can be empowered to command documents from issuers, accountants or distributors, and to subpoena witnesses. La Porta et al. (2003) summarize such powers into a sub-index of Investigative Powers of the Regulator. Clearly, the first part of Q3 is also trying to gauge the investigative powers of the Regulator, and like Q2, is an extensiveness

question. The second half of Q3 asks whether the Regulator, if endowed with investigative powers, can use them in both the regulation of share issues and bond issues, i.e. the focus is on comprehensive regulation of the securities market as well as on focused regulatory powers. La Porta et al (2003) also stress the importance of a focused Regulator. They argue that an effective securities regulator needs to stay focused on securities market only rather than on both banking and stock markets. While Q3 does not rule out banking regulation, an affirmative answer to both regulation of share and bond issues does imply a Regulator with comprehensive powers of investigation. The information gathered in Q29 of the Capital Markets section of the LIS is also linked to the attributes of the Regulator. This question asks whether trained and knowledgable staff work in the agency charged with regulation of securities markets (the first half of the question asks the same about bank regulation). An affirmative answer to this question, is awarded 0.5 weight, and the question is contributing to the total effectiveness score. Presumably, the better staff the Regulator has, the more effective its work, and the enforcement or effectiveness of securities regulation would be. We consider this question, as part of the Regulator's attributes, which define its independence, focus and investigative powers. Finally, Q1 and Q4, previously included under the rubric of Supervision and Regulation, are considered less important and will be omitted from the analysis[9]. Q1 asks whether securities laws or regulations have been enacted or amended over the preceding 8 years, i.e. since 1991. An affirmative answer gains a score of 1 and counts toward legal extensiveness. Q4 asks whether securities can be sold through other mechanisms than a stock exchange. It used to be an effectiveness question on a 5-point rating scale, which awards higher scores, if such trade happens regularly. Presumably, expanding the opportunities for trade is considered beneficial for

[9]Such omissions, done at a later stage than the cleaning of the data, are another source of differences between previously published legal scores and indices based on the LIS, and those used in this dissertation.

market participants. However, it is not very obvious how beneficial over-the-counter trade could be in most transition countries, where securities markets are not very well developed. Therefore, we choose to treat these questions with caution, and to exclude them from the Regulator Attributes and Powers of Investigation sub-index, which then becomes an average of Q2, Q3, and Q29b.

2.4.1.3 Enforcement Powers of the Securities Regulator and the Legal Indicator Survey

A separate rubric of the Securities Markets section of the survey is devoted to the enforcement powers of the Regulator. Q11 for example asks whether the Regulator has enforcement powers. Clearly, the question assumes that the lawyers understand what such enforcement powers are. The second part of the question in fact helps to outline these enforcement powers. Respondents are asked whether the Regulator is empowered to revoke an issuer's listing, and to impose civil fines or penalties in cases of non-compliance with securities rules. The existence of civil liability of issuers scores higher than authority to delist. Both are non-criminal sanctions for violations of securities law. Affirmative answers to all parts of Q11 gain a score of 1, and count towards extensiveness (previously this was considered an effectiveness question, which we consider inappropriate since the question refers to law content rather than enforcement). Q12 asks whether the Regulator has engaged in oversight or enforcement action over the preceding 5 years, to see how much enforcement has occurred in practice. An affirmative answer scores 1 point, and also counts toward effectiveness. Similarly, La Porta et al. (2003) also review the powers of the Regulator to impose civil sanctions on securities market participants. These sanctions include orders on public firms' directors to amend non-compliance with disclosure requirements, to institute changes recommended by outside reviewers and to compensate investors for their losses. They track whether or not such sanctions

may be imposed on issuers, accountants and distributors alike, and average the scores into a sub-index of "Orders". While their analysis is more detailed and focuses on various market players, the information gathered by Q11 and Q12 of the Legal Indicator Survey captures the same notion.

Questions Q13, Q14 and Q15 are all concerned with insider trading. They try to gauge the enforcement powers of the Securities Regulator. The Regulator is also one of the essential institutions to control self-dealing by insiders. Insider dealing or trading is defined as trade between company insiders and less informed investors, in which the insiders use information about the company not known to the other investors. As discussed earlier, e.g. Black (2001), one of the ways to control insider trading is to have securities or other laws which prohibit insider trading, and to ensure that such laws are enforced. All three survey question are designed to assess this in the transition economies. An affirmative answer to Q13 is awarded with a score of 1. Q14 asks through what kind of a normative act insider trading is prohibited, and assesses whether there is a comprehensive ban through law – both private and criminal – as well as through administrative rules and stock exchange rules. The rationale is that, if there is a law, a securities law or other, which bans insider dealing, then suits on insider dealing can be filed before the courts. Any administrative rules, issued by the government, also need to help eliminate insider trading and support the law. Stock exchange rules and charters should also complement the law and discourage insider trading. Finally, criminal liability and sanctions could also be sought in cases of insider trading. La Porta et al. (2003) list and code criminal sanctions against violators of securities laws alongside civil sanctions. The prevailing view in today's thinking about securities laws is that they should impose criminal liability on issuers, accountants and distributors for certain violations of the law. By asking whether a criminal law bans insider trading, the Legal Indicator Survey assumes that such criminal liability may be sought in cases

of insider trading. Both Q13 and Q14 count toward Capital Market extensiveness.

Finally, Q15 asks how often the Regulator uses his enforcement powers to penalise cases of insider dealing or fraud. Thus, this question seeks to assess how well insider trading rules and laws are enforced. Enforcement makes violators learn that they cannot violate these rules with impunity. Some of the literature also links enforced insider trading rules with better stock market performance. For example, Bhattacharya and Daouk (2002) report that many countries have laws prohibiting insider trading, but only in few of them these laws are enforced. Enforced insider trading laws are found to have a significant negative effect on the cost of equity, whereas unenforced insider trading rules do not affect the cost of equity. Hence, all indications are that Q15 is particularly important. It is an effectiveness question and is rated on the 1 to 5 scale, with higher frequencies awarded higher scores.

2.4.1.4 Regulation of Securities Market Intermediaries and the Legal Indicator Survey

A separate section of the Legal Indicator Survey, comprising 12 questions, is concerned with securities market intermediaries (also known as reputational intermediaries), investment and pension funds, and some other features of the securities market. The importance of market intermediaries such as accountants, auditors, investment bankers serving as underwriters and distributors of securities, is underscored by Black (2001) and others as one of the core institutions to solve the information asymmetry between securities issuers and investors. A sophisticated accounting and investment banking profession with securities laws defining liability for each if they endorse misleading or wrong information, is a core institution to counter asymmetric information. Furthermore, Black (2001) lists mandatory licensing of reputational intermediaries, as well as their being subject to self-regulation, as extremely useful in facilitating good financial disclosure. He also considers the

presence of investment funds as a positive feature of the securities market, enhancing good disclosure and providing investable funds. In this regard, the information which the LIS attempts to collect falls very much under the realm of these arguments. For example, Q17 asks whether securities laws regulate the conduct of securities market intermediaries such as brokers and dealers; whether intermediaries are subject to mandatory licensing before they begin operation, and whether licensing is based on certain minimum standards and professional qualifications. An affirmative answer to the third sub-question is thought twice as important as an affirmative answer to the first two parts. This is in line with Black's points about the preeminence of a sophisticated and competent accounting, investment banking and securities lawyer professions as a core institution. The terms brokers and dealers, as used by the LIS, subsume accountants, auditors, investment bankers, lawyers and others who are engaged as intermediaries in the sale of securities between the issuers on one end and the investors on the other. Q18 asks whether any intermediaries have had their licenses revoked by the Regulator or by any other self-regulatory organization. This is an effectiveness question, measured on a 1 to 5 rating scale, aimed at evaluating to what extent the enforcement powers of the Regulator or other self-regulatory organizations work in practice. While Q17 counts toward Capital Market extensiveness, Q18 contributes toward effectiveness. Q19 asks whether securities market intermediaries are subject to mandatory self-regulation. As discussed above, self-regulation can serve as a useful complement to the core institutions ensuring honest behavior by the intermediaries in endorsing a company's financial disclosure. It is an effectiveness question, which scores highest points when self-regulation over intermediaries exists.

Four questions (Q20 to Q24) refer to the existence of collective investment schemes, defined as investment funds (mutual funds) or funded pension schemes. Their existence, and the existence of private schemes is regarded as beneficial for the

securities market. Both pension and investment funds provide market liquidity and require good financial disclosure. Therefore, they can be a useful institution to have in order to counter information asymmetries in the securities market. Furthermore, Q21 asks whether separate rules and regulations govern the licensing of investment and pension funds. This would impose checks on them and make it mandatory that they themselves disclose information material to investor's decisions. Q23 asks precisely that – whether issuers of securities by investment or pension funds must disclose financial information to investors. Q22 then gauges whether the information provided by investment and pension funds to investors is accurate, i.e. whether financial disclosure by them is good and well enforced. Questions Q20 and Q21 are extensiveness questions, whereas Q22 and Q23 were previously considered effectiveness questions. However, while Q22 gauges enforcement of disclosure rules regarding investment funds and pension funds, it is not so obvious whether Q23 does that too. It just refers to the securities or other law or rule which describes what type of information should be disclosed by investment and pension funds. Therefore, we choose to treat it an extensiveness question instead.

Three questions in the Securities Markets section of the Legal Indicator Survey relate to investor compensation in the event of losses incurred as a result of a failure of a market intermediary. La Porta et al. (2003) stress the importance of civil liability and the ability of the Regulator to make issuers or other intermediaries compensate investors for their losses following non-compliance by the issuer or the intermediary with mandatory disclosure requirements. Q24 for instance asks whether provisions in the securities law are in place whereby investors get compensated for their losses after failure (we assume insolvency) of a market intermediary. The question should be interpreted more broadly to include also compensation for investor losses after failure to ensure good disclosure by the issuer. Q25 then asks whether such failures have happened in the preceding three years (1996 to 1999),

and Q26 asks whether in these cases investors did receive compensation. All three questions were previously considered effectiveness questions. Since Q25 is concerned more with an outcome rather than a legal rule, we remove it from the legal indices used in the following analysis. An affirmative answer to Q24 is awarded 1 point, and Q26 is measured on the usual 1 to 5 rating scale about the frequency of investor compensation.

Finally, Q27 asks about the existence of a shareholder depository. The existence of a law governing this, and its operation in practice are given equal weights, and contribute to capital market extensiveness and effectiveness respectively. The rationale here is that the existence of a shareholder depository is useful in bringing about market transparency about shareholdings and trades. Thus, it is thought to be an institution enhancing good disclosure and facilitating the resolution of asymmetric information. One last question under the rubric of Regulation of Securities Market Intermediaries – Q16 – asks whether a functioning stock exchange exists in the respondent's country. The information provided as an answer to this question can serve two purposes. First, it captures the existence of a stock exchange as a reputational intermediary in its own right. Indeed, Black (2001) lists stock exchanges with their listing rules and ability to enforce them as one of the main reputational securities market intermediaries. Both exchanges and investors understand that false disclosure by a member will affect the reputation of all listed members. Reputational concerns make the stock exchange enforce its listing standards. So, the survey included this as an effectiveness question, scoring 1 point for an affirmative answer. However, a second interpretation is also possible. It can be argued that this question does not measure how well the law is enforced, but rather measures an outcome of how good the law or its enforcement are. Therefore, we remove this question's answer scores from the legal indices used in Chapter 3.[10]

[10]This is an additional source of difference between previously published legal scores, and the ones used in the thesis.

2.4.2 Effective Courts and the Legal Indicator Survey

Finally, a question counted in the Securities Markets section of the Legal Indicator Survey, but actually meant to capture effectiveness and enforcement for both banks and stock markets, asks whether courts are authorized to review enforcement decisions or other corrective actions, presumably by the Regulator, for banks and other securities firms. Therefore the question refers to financial regulation in general, and not to securities market decisions only. Court involvement is given points, following the logic that good courts can complement and provide a check against the Securities Regulator's decisions. Black (2001) stresses the importance of effective court enforcement in cases of wrong disclosure. It is questionable, however, how beneficial court review of decisions would be in the transition countries, where courts are generally known to be corrupt, slow and expensive. Given these uncertainties, as well as the fact that the question does not relate to securities regulation per se, we exclude it from the indices of Capital Market effectiveness in the analysis to follow.

2.4.3 Bank Regulation and Supervision

An entire section of the Legal Indicator Survey is devoted to the regulation and supervision of banks in the transition countries. We will proceed with reviewing the questions and main themes of this part of the survey, providing information about the economic foundations of question weights as we go along.

There exists a voluminous body of literature dealing with the rationale for bank regulation and supervision, e.g. Goodhart (1998). Public regulation of economic activity is justified by market failures due to three main sources: 1) the presence of market power, 2) the presence of externalities, and 3) asymmetric information between buyers and sellers. As discussed by Freixas and Rochet (1998), these three main reasons for public regulation imply a need for prudential regulation of individual banks. However, they argue that there are specificities about banks and the

banking system, which call for a close look at banking regulation. One of the often-cited justifications of bank regulation is the need to provide a safety net for banks in order to protect depositors from the risk of failure of their bank. How are bank failures different from the failures of non-financial firms? One reason why bank failures are so costly is due to the fact that bank debt is held by many, usually small, dispersed agents (mostly households), who are not in a position to monitor the bank's activities, whereas only the wealthy, or informed intermediaries, hold claims (debt or equity) in non-financial firms. Therefore, an asymmetric information problem arises – the bank's insiders and managers know much more about the bank's activities than the bank's creditors (depositors, stockholders and other banks). It is true that large firms are also financed through securities issues to many dispersed shareholders. However, bank debt and firm equity differ in the fact that the latter is not used as a means of payment (while bank debt is), which means that the free-rider problem associated with bank monitoring is more pressing than in the case of firm equity, and the fact that the debt-to-assets ratio is much higher in financial intermediaries than in non-financial companies. Therefore, free-rider problems associated with the monitoring of widely-held firms are thought to be much more serious and pronounced in banks and other financial companies, than in non-financial ones.

What types of supervisory and regulatory practices work best? Is there a universal set of bank regulatory rules and regulations? Since banking regulation and supervision is usually codified in banking laws and regulations, the question has implications for the relevant laws and regulations pertaining to bank regulation and supervision. Are there universally acceptable rules about what bank supervision and regulation should or should not do?

Barth, Caprio and Levine (2001) build a new database of information on regulation and supervision of banks in 107 countries worldwide. The data are based on surveys conducted among bank supervisory and regulatory authorities, and cover

a broad area of issues, such as entry requirements for banks, bank ownership restrictions, bank capital requirements, activity restrictions, external auditing requirements, deposit insurance characteristics, loan classification and provisioning requirements, accounting and disclosure requirements, and the independence of the supervisory authority. Using these data, Barth, Caprio and Levine (2004) examine the impact of specific bank regulations and the development and fragility of the banking sector. What they find is that regulations aimed at eliciting accurate information disclosure from banks, thereby empowering private sector monitoring of banks, as well as regulations which create incentives for private agents to monitor banks, work best in promoting bank performance and stability. On the other hand, regulations which restrict bank activities are negatively associated with bank performance and stability. Bank capital regulations are not found to be closely linked to bank performance or activity. Moreover, measures of official supervisory power, resources, independence, loan classification stringency, provisioning stringency, etc. are found not to be robustly linked to bank performance or bank stability.

Since the Barth, Caprio and Levine (2001) database covers most of the transition economies and most of their survey data are as of 1999, In chapter 4 we proceed with a comparison, where possible, of the various aspects of bank regulation and supervision captured by their data and the LIS survey. In the next sections of this chapter we review the economic rationale behind the LIS Banking Laws questions and their weights. As we go along, we will be proposing a different way of aggregating the LIS data than used so far. It is important to stress that there is no unique way of aggregating and quantifying the LIS data on bank regulation, as also mentioned above in the section on securities regulation.

2.4.3.1 Supervisory Independence

There are competing theories about the scope and need for government regulation of the economy. Going back to Pigou (1938), monopoly power, externalities and asymmetric information in markets create the need for powerful government regulation. This is the so-called "helping hand" view of government regulation. Applied to banking industry, this view emphasizes the importance of powerful and independent bank regulators and supervisors. The arguments for this are that private agents such as depositors do not have the ability or incentive to monitor and supervise banks, and will be tempted to free-ride on others to perform such supervision and monitoring. In the end, there will be too little supervision, which undermines bank stability and performance. Second, since there exist problems of asymmetric information, banks would be prone to contagious and socially costly bank runs. If we assume a benevolent government, interested in preventing such bank runs, bank supervision can serve a socially efficient purpose in preventing and limiting the effects of such bank runs. Finally, most countries have instituted deposit insurance schemes, protecting depositors up to a given amount in the event of bank failures, and this reduces private agents' incentives to monitor banks, while at the same time creates incentives for bank managers to undertake more risky operations. From this perspective, it is argued that strong official supervision can prevent banks from engaging in such high-risk-taking activities, and thus prevent bank failures and improve bank performance.

There is also an opposite school of thought, which raises doubts about the benefits of powerful government regulation, e.g. Glaeser and Shleifer (2003), Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) and (2003a). The proponents of this school, referred to as "the grabbing-hand view of public regulation", argue that powerful public regulators usually implement regulations that favor political constituencies rather than ameliorate market failures. Applied to the banking sector,

this theory posits that bank supervisors may actually exert negative rather than positive influence over bank performance and stability. For example, in countries with powerful regulators governments may try to use this power to favor certain political constituencies, extract bribes, or attract campaign donations. In this manner, powerful regulators would not be exclusively focused on overcoming market failures and maintaining bank stability, but rather will expend efforts in achieving their own narrow objectives. From this perspective, it is expected that powerful supervision and regulation of banks would be associated with higher corruption, but with no improvements in bank performance or stability.

The assessment of these two views is largely an empirical question. Barth et al. (2001) collect data on several aspects of supervisory and regulatory power. These are the number of bank supervisors, the average tenure of bank supervisors, the official legal power of the supervisory agency, and the independence of the supervisory agency. The variable which allows a comparison with the LIS is independence of the supervisory authority. It has two components: political independence, i.e. the degree to which the supervisory authority is independent from the government, and independence from banks, i.e. the degree to which the supervisory authority is independent from lawsuits from banks and other parties. The index of political independence is measured on a 1 to 3 scale, with 1 standing for low independence, 2 - for medium independence, and 3 - for high independence. The degree of independence is determined by survey answers to the following three questions:

1) To whom are the supervisory bodies responsible or accountable?

2) How is the head of the supervisory authority (and other directors) appointed?

3) How is the head of the supervisory authority (and other directors) removed?

The degree of independence from lawsuits by banks or others is measured on a 0-1 scale, with 1 being awarded if bank supervisors are not legally liable for their actions, and 0 otherwise.

The overall index of supervisory independence is then the sum of these two sub-indices, and varies from 1 to 4, with higher values signifying greater independence.

The first question of the LIS Banking Regulation and Supervision section – Q1 – is most closely related to the independence of the supervisory authority. It asks whether banks and other financial institutions are regulated and supervised, and determines whether the regulator is the Minister of Finance (no political independence), a separate body that has at least some political independence, or a separate body with no political independence. Presence of regulation and supervision is awarded 0.25, no independence and no separate body regulating gets 0 points, a separate regulatory authority with no political independence gets 0.25 points, and a separate authority with at least some political independence scores 0.75 points. Overall, the value ranges from 0 (if banks are not supervised) to 1 (if banks are supervised and the regulator is a separate body with some political independence). In between we have a score of 0.25 if banks are regulated, but the regulator is the Minister of Finance, and 0.50 if banks are regulated by a separate body, but the latter lacks political independence. While carefully checking each individual response to Q1, we have corrected two prior coding errors[11].

2.4.3.2 Ease of Foreign Bank Entry

Part of the LIS is concerned with the banking laws and regulations governing the ownership of domestic banks by foreign banks and the entry of foreign banks into

[11] One of the 13 answers for the Czech Republic showed that a regulator exists, but had no answer to the question "Are financial institutions regulated and supervised?", scoring 0 points on it. We have assumed that the correct answer is "Yes", since the next sub-question has been answered. This raises the total average score for the Czech Republic on Q1 from 0.69 to 0.71. A similar mistake occurs in one of the 7 answers for Poland. The answer indicates that a regulator, which is a separate body with at least some political independence exists, but does not have an answer to the first sub-question on whether financial institutions are regulated and supervised. Again, we correct the answer to be "Yes", and this raises the score for this entry from 0.75 to 1.

the domestic market. A series of related questions elicit information whether foreign ownership in financial institutions (banks) is permitted in the respondent's jurisdiction, whether certain limits on the share of a domestic bank owned by a foreign bank are in place, and whether foreign banks are subject to a special licensing regime before they can make an investment in a local bank. A fourth question asks whether the licensing requirements for the subsidiaries or branches of foreign banks differ from those for domestic banks. Before we engage in analyzing the collected data from these questions, let us briefly outline the importance of regulatory restrictions on foreign ownership of banks and entry of foreign banks into a country's banking market. In broad terms, foreign ownership and entry restrictions, alongside restrictions on domestic banks' permissible activities, constitute regulations of competition in the banking sector.

Recent empirical evidence suggests that foreign bank entry can bring about substantial benefits to the host country in terms of increased banking sector competition and the quality of banking disclosure and supervision. Clarke, Cull, Martinez Peria and Sanchez (2001) review the literature on foreign bank entry and discuss the benefits and risks of foreign bank entry. One of the findings of the literature is that foreign banks are more efficient than domestic banks in developing countries, while in developed countries, such as the United States for example, foreign banks are less efficient than domestic ones, perhaps due to linguistic or cultural differences. Cross-country empirical studies point to several factors, which affect the decision of banks to enter a foreign country. These are the degree of bilateral trade and economic integration between the home and host countries, the market opportunities available in the host country, and the entry restrictions and other regulations in the host country, which banks are subjected to. Some evidence (Miller and Parkhe (1998)) suggests that higher FDI flows to a host country are associated with more foreign bank entry, but the result does not generally hold for develop-

ing countries. It is conjectured that in developing and transition countries foreign banks face relatively less domestic competition. Therefore, developing countries offer very good profit opportunities in the provision of banking and financial services. In this regard, foreign bank entry might precede and even help bring about entry of non-financial firms (non-financial FDI). Profit opportunities and market conditions in the host country are paramount. For instance, Claessens, Demirguc-Kunt and Huizinga (2001) analyse foreign bank entry in 80 countries during 1988-1995, and establish that foreign bank entry is significantly associated with a reduction in the profitability, non-interest income and overhead costs of domestic banks. This result is interpreted to mean that foreign entry is associated with greater efficiency in the domestic banking system. High profits mean less competition, *ceteris paribus*, while high overhead costs are indicative of less efficient management or organizational structures. An interesting finding is that it is the share of foreign banks in the total number of banks in the host country rather than the share of foreign bank assets in total bank assets in the host country, which is empirically found to affect the competitive environment in the banking market.

A cross-country study by Focarelli and Pozzolo (2001) examines cross-border mergers and acquisitions in the banking industry, using data on approximately 2500 banks in 29 OECD countries. They establish that cross-border mergers and acquisitions are less frequent in the banking sector compared to the rest of the economy, and that in part this difference is due to regulatory restrictions in the banking sector. More stringent regulatory restrictions in the banking industry of a country reduce both the competitiveness of its domestic banks, and hinder foreign bank entry. Estimated probit regressions indicate that the decision to of a bank to acquire equity in a foreign bank is positively and significantly associated with both the bank's efficiency as proxied by profitability, and the home country banking market's efficiency, again proxied by the country-level return on assets (profitability).

Furthermore, the probability to internationalize is also positively and significantly associated with the bank's share of non-interest income. Non-interest income at the aggregate country level however is found to reduce the probability to go abroad. In addition, bank size is also found to have a positive and significant impact on the bank's decision to enter a foreign market. Among the country-specific variables affecting significantly this decision are foreign trade openness as measured by the share of exports in GDP; the size of the home country banking sector, measured by the ratio of total domestic credit to GDP and stock market capitalization as percent of GDP. The latter has a negative impact on the probability to go abroad; the former two – a positive one. Furthermore, regulatory restrictions in the home country's banking market and restrictions on outward banking FDI significantly reduce the probability of home country banks to acquire shareholdings in foreign banks. The study includes three Central European transition economies, which are members of OECD - the Czech Republic, Hungary and Poland. Unfortunately, the authors exclude their observations from the estimation of the preferred equation (including regulatory restrictions among the regressors) due to lack of data on regulatory restrictions in these countries. Overall, the study has pertinence to the current chapter in the fact that banking regulatory restrictions in general and the restrictions with respect to ownership of foreign banks are found among the main factors behind banks' decision to go abroad. Second, contrary to previous thinking that foreign banks mainly cater to their country's multinationals in the host country, the papers reviewed above point to issues of efficiency and profitability driving banks abroad in search of better profit opportunities. The studies also confirm the previous finding in the literature that in developing and transition economies foreign banks are more efficient than local banks, thus helping to enhance competition and driving local banks to undertake restructuring in search of new niches and market opportunities.

As a further example of the foreign banking literature, case study evidence from

Hungary presented by Bonin and Abel (2000) lends support to the view that in the developing and transition economies foreign banks are attracted mainly by market opportunities rather than "follow the customer" policies. In Hungary, which in 1999 had close to 60% of banking assets held by foreign banks and was among the first transition economies to rapidly open its banking market to foreign penetration, foreign banks have entered the retail banking market rather then staying involved in wholesale operations and industrial lending, which is typical of foreign banks in general. Foreign banks are involved in deposit taking and consumer lending in Hungary, and Bonin and Abel (2000) also present evidence that foreign entry has forced incumbent domestic banks such as OTP – the largest Hungarian commercial bank – to look for new market niches and improve its services. Thus, OTP has managed to restructure successfully and, being under the pressure of foreign competition, now provides improved retail banking services and holds a large share of the bank cards issued in Hungary (about 40% in 1999).

One of the main findings of the recent literature on internationalization of banking is that host-country regulations, which limit banking market competition and protect inefficient local banks, are a deterrent to foreign entry. As mentioned above, Focarelli and Pozzolo (2001) find that foreign entry is lower in countries with heavier regulatory restrictions on banking activity. Furthermore, Barth, et al. (2004) find evidence across 107 countries that heavier restrictions on domestic or foreign bank entry are associated with higher net interest margins and overhead costs, and that limitations on foreign bank entry and ownership increase significantly the likelihood of a banking crisis. Therefore, restrictions and limitations on foreign bank entry and ownership worsen bank performance and banking system stability.

Going back to the LIS, we assign weights to the questions related to the regulation of foreign bank ownership on the assumption that foreign ownership is beneficial and carries minimum risks. Thus, the question whether or not foreign ownership

of banks (and financial institutions) is permitted – Q17 – gets a score of 1 for a positive answer, and 0 for a negative one. A question on the percentage of control shares of a bank that can be owned by foreigners (Q18) awards the maximum 1 point to a lack of any such restrictions, i.e. when a bank may be 100% foreign-owned. Fractions of a point (0.75 and 0.5) are awarded when greater than 50% but below 100% is permitted, and when the limit is between 26% and 50% respectively. Fractions of a point are deducted when the permitted share is less than 10% (-0.5 score) and between 10% and 25% (-0.25 score). Finally, 1 point is awarded when the banking laws do not impose a need for a foreign entity to obtain a special license before acquiring shareholdings in a local bank (financial institutions) – this is question Q19. Also, one point is also given when the licensing requirements for foreign banks do not differ from those for domestic banks (Q20). We average the scores of these four questions to get a sub-index of the ease of foreign bank ownership (FOR_EASE_P).

One caution is in order here: when reviewing each country's entry for these LIS questions we discovered a number of missing answers. For instance, a respondent would answer that foreign ownership is permitted, and would specify what the limits for it are, if any, but would fail to provide an answer to the question whether a special license is necessary. Alternatively, a respondent would indicate that foreign ownership in financial institutions is allowed, but would not reveal what its maximum permissible share of a domestic bank's control capital is. By the nature of the summation of the answers until now, these "no answers" have been treated as zero values, thereby producing a downward bias in the final average scores. We have decided that a correct treatment would be to treat these "no answer" cases as truly missing values, and have adjusted the country scores for the particular question affected accordingly, generally raising scores for Q19 and Q20 across most of the sample countries. An alternative way to address this problem would be to

treat these as "Unclear" values, and deduct a fraction of a point (0.17) whenever they occur, particularly because both Q19 and Q20 do not allow for the "Unclear" category in their answer menus.

2.4.3.3 Private Monitoring of Banks

The central finding of the Barth et al. (2004) studies as well as subsequent studies utilizing their cross-country database on bank supervision, e.g. Beck, Demirguc-Kunt and Levine (2003c), is that when bank supervision focuses on eliciting accurate information disclosure it eases private agents' monitoring of banks and is associated with better financial market outcomes. For example, firms perceive significantly lower obstacles in raising external finance in countries with stronger and easier private monitoring of banks. In contrast, official bank supervisory power, i.e. the powers afforded to the supervisory agency to conduct supervision, are found to affect firms' financing obstacles positively and significantly. Furthermore, more official supervisory power is associated with more corruption and a higher role of connections and nepotism in financial intermediation. Supervisory independence, however, is found to mitigate some of the negative effects of official supervisory power. The authors contend that these findings support the so-called "private empowerment view", i.e. the notion that supervision of banks should address the information and enforcement costs of private agents' monitoring of banks by enhancing their ability and incentives to overcome information problems and exert corporate control over banks. It also seeks in so doing to limit the power of bank supervisors so that they are less susceptible to capture by political or private interests. Yet, the supervisory agency must have sufficient powers in order to be able to force accurate information disclosure. How to achieve the right balance is the crucial issue.

Barth et al. (2004) construct an index of Private Monitoring of Banks. This index is a composite of nine dummy variables, which measure 1) whether banks must

be audited; 2) whether the bank auditor is an internationally certified and licensed auditor; 3) whether 100% of the top 10 domestic banks are rated by an international rating agency; 4) whether or not an excessively generous deposit insurance is in place, which distorts private agents incentives to monitor banks; 5) whether banks must publish consolidated statements; 6) whether banks must disclose off-balance sheet items to the public; 7) whether banks must disclose internal risk management procedures to the public; 8) whether bank managers and directors are legally liable for disclosing misleading or erroneous financial information; and 9) whether subordinated debt is allowable as bank capital. It is straightforward to see how these components affect the abilities of the public to better monitor banks. For example, having the bank audited would provide an independent check on the financial information, which the bank releases to the public. Requirements that the auditor be certified and licensed internationally is a further step in making sure that the outside evaluation of the bank's financial condition is accurate and up to standard. The higher the share of domestic banks which are rated by foreign rating firms, the better the public's awareness of the overall condition of the country's banking industry. Absence of an explicit deposit insurance scheme and lack of depositor compensation the last time a bank failed are awarded 1 point on the assumption that generous deposit insurance and guarantees that deposits are protected would lead to less private monitoring and more risk-taking by banks, i.e. will exacerbate the free-riding and moral hazard problems which deposit insurance creates. Further, when banks are obligated to release accounting information on a consolidated basis (i.e. parent bank and subsidiaries, including non-bank financial affiliates or subsidiaries) reduces the scope for banks to hide problems by shifting losses around, and therefore enables better private sector monitoring. Private monitoring is also made easier by making banks disclose off-balance sheet accounting information, and by requiring banks to also release risk-management procedures to the public. Mak-

ing it possible to prosecute and bring to court bank managers, who have released wrong or misleading information, also reinforces the abilities of the private sector to monitor, but, more importantly, enhances bank managers' incentives to disclose accurate accounting data. Finally, treating subordinated debt as part of bank capital creates further checks on the bank by establishing a new class of bank monitors, i.e. the suppliers of subordinated credit. Thus, the BCL Private Monitoring Index ranges from 0 to 9, with higher values indicating more tools and mechanisms for private bank monitoring, and is constructed as a principal components indicator.

As mentioned earlier, the banking law section of the LIS uses as a guidepost the Basle Committee on Banking Supervision's Core Principles for Effective Banking Supervision (1997). Most of the survey questions are gauging the extent to which national banking laws comply with these Core Principles[12]. Several of the survey questions (Q22 to Q28) are directly concerned with the frequency with which banks publish financial statements and the accounting standards being used; with the requirement for regular audits of bank financial statements and whether or not external auditors are used; and whether or not banks prepare financial statements on a consolidated basis according to the law, and in practice. Thus, Q22 asks whether banks generally prepare financial statements that are restated in accordance with International Accounting Standards, or the generally accepted accounting principles of a country home to an international financial center (such as the United States or the United Kingdom). Answers are given on a Yes-No-Unclear scale, and adherence to international accounting standards is awarded 1 point. Lack of clarity in the law is penalised at -1/6 of a point. The next two questions are nested within Q22. Q23 asks those respondents, who indicate that IAS are being used by banks

[12]Principle 21 of the Core Principles establishes that banks must maintain records prepared in accordance with consistent accounting practices that enable bank regulators to obtain a fair and true view of the financial condition of the bank and its profitability, and that banks must publish such financial statements on a regular basis.

in the preparation of financial accounts, whether the shift to IAS has produced any different financial outcomes. Presumably, good local accounting principles would mean less of a difference in major accounts when restated along international principles. This notion is reflected in the answer weights, with a maximum value of 1 awarded to lack of such disparity across the board; and fractions of a point 0.6 and 0.4 respectively being awarded when only very few or the majority of banks are affected. If all or almost all banks are affected, zero points are given. Finally, the last part of Q23 asks the subset of lawyers who say that IAS are not yet used by banks, i.e. who give a negative answer to Q22. In this case, the question is whether IAS are in the process of being implemented, and an affirmative answer scores 1 point. Therefore, no IAS and no process of switching to IAS is worth 0 points, IAS being implemented but not yet used by banks is worth 1 point; IAS being already in use, but causing great disparities between statements according to local standards and international standards for almost all banks is also worth 1 point; and IAS being used and no substantial disparities between local and international standards is worth between 1 and 2 points, with complete absence of disparities between financial results following local and international standards getting the full 2 points. Thus, the weighting reflects the assumption that good financial disclosure is desirable in order to enable both bank supervisors and private agents to acquire accurate information about the financial condition of the bank, and that good financial disclosure by banks should be based on comparable, internationally-acceptable, accounting principles, created specifically for the banking industry. Q24 addresses the issue who is responsible for setting the accounting standards in general use in the respondent's jurisdiction. The accompanying weights reflect an assessment that the professional accounting community is better equipped to adopt accounting laws which comply with internationally-accepted rules and principles.

The rationale behind the LIS questions on accounting and the BCL accounting

variables, which are part of the index of Private Monitoring, is practically the same. The LIS, being a survey specifically targeted at transition economies, attempts to establish to what degree IAS have become operational and used by banks in their financial accounts. Similarly, the BCL survey asks supervisors to specify bank accounting features, and the answers are then employed to form the Bank Accounting sub-index.

Recognising the need for an independent external review of the financial information released by banks, Q25 of the LIS asks law firms whether banking laws mandate that banks' financial statements get audited at least annually. Presence of at least annual audits gets 1/4 of a point, and use of international auditing standards scores a further 3/4 of a point. The next LIS question, Q26, asks about the frequency with which banks use external auditors for their annual audits. Its menu of answers is given on a frequency-rating scale from 1 to 5, with 0 to 1 points being awarded for higher frequencies, in equal increments of 0.25. As outlined above, the BCL survey of bank supervisors also collects information whether an outside audit is mandatory for the financial statements of a bank, and whether the auditor is licensed or certified, and the answers to these two questions make up two of the dummies used in aggregating the Private Monitoring index. As explained earlier, the presence of an external audit of financial information issued by banks creates confidence that the information submitted to bank supervisors and released to the public is accurate.

Next, the LIS (Q27) attempts to ascertain whether the financial statements of banks must be prepared on a consolidated basis, i.e. a parent-bank and bank branches prepare joint financial accounts. This question's answers assume the familiar Yes-No-Unclear format, with affirmative answer getting 1 point. The benefit of having banks report on a consolidated basis is that if the bank is in trouble and consolidated reporting is not the norm, it may attempt to shift non-performing assets or off-balance sheet items to a subsidiary, and thus conceal the problematic

assets. This would present an unfair picture of the bank's financial condition. Hence, consolidated reporting of financial results is required. Similarly, the BCL database builds the banking law requirements for consolidated financial statements into the index of Private Monitoring. The existence of such a requirement is assumed to enhance the ability of private agents to monitor bank behavior.

Finally, the LIS (Q28) gathers information about the frequency with which banks are examined by the supervisory agency on a consolidated basis, i.e. a parent-bank and bank branches are examined together. This effectiveness-type question is built upon the usual 1 to 5 rating scale, and scores are awarded from 0 to 1 in equal increments of 0.25 for higher rating frequencies.

2.4.3.4 Permissible Bank Activities

The LIS gathers information about restrictions imposed by banking laws on the nature and scope of permitted business activities of banks. In particular, Q7 asks whether banking laws and regulations include a list of permissible activities for banks. A nested sub-question then goes on to elicit information about the specific types of activities which banking laws permit banks to engage in. Among the answer options are traditional bank activities such as granting of loans and acceptance of deposits. Further, the question also seeks answers as to whether securities underwriting and dealing and insurance activities are allowed for banks. One answer option is also "only activities closely related to banking", which one would assume would be only lending and deposit-taking activities. Finally, among the menu of choices respondents can also check "Other" for activities that are allowed, but not explicitly shown in the answer menu.

The next LIS question - Q8 - asks whether there are prohibited activities for banks and financial institutions, and more specifically, whether securities underwriting and participation in investment funds are activities legally prohibited for banks.

In the same line of thought, Q9 asks whether banking laws impose restrictions on banks' holding of both government and private firms' securities. Therefore, the latter question also seeks to establish whether banks may own shares in non-financial private companies.

These questions attempt to determine whether banking laws impose restrictions on the so-called universal banking, i.e. allowing banks not only to engage in typical banking activities such as lending and deposit-taking, but also in securities, insurance and other activities, as well as to be shareholders in non-financial firms. This mixing of banking and commerce has recently received a lot of attention in the banking literature. How to assign weights to the LIS questions just mentioned, therefore, is a matter of assessing the *pros* and *cons* of universal banking, and assessing what the empirical evidence shows.

Among the theoretical arguments for restricting the degree to which banks can engage in securities, insurance, real estate and other commercial activities is that conflicts of interest might arise when a bank underwrites a firm's securities, while it also extends a loan to the same firm. The bank might abuse its informational advantage by knowing more about the firm than others, and might "dump" low-quality securities on other, less-informed customers so as to assist the firm with the outstanding loan. Another cost of universal or integrated banking (see Claessens and Klingebiel (2001) for analysis of the benefits and costs of integrated banking) is that a broader set of activities that may be undertaken can increase risky behavior by banks. Next, universal banking might entail a reduction in competition in the financial industry, and thus lower market efficiency[13]. Further, universal banking might be costly since it would lead to larger, more concentrated banking and economic power. Such large financial institutions might become so politically and economically powerful that they would be "too big to discipline". Therefore,

[13]Claessens and Klingebiel (2001) discuss that this cost might be partially offset by a liberal policy toward bank entry.

universal banking makes bank monitoring more difficult - both from the supervisor's perspective, and from the market at large. Another potential cost of universal banking is that deposit insurance and bank safety nets might be extended to the investment and commercial activities of universal banks.

In summary, since universal banking entails conflict of interests, might lead to too large and powerful banks which limit market competition, breed more risky behavior, and are difficult to supervise and monitor, the government can limit the scope of bank activities, and thereby enhance competition and performance in the banking industry.

There are, however, alternative views on universal banking, which claim that allowing banks to engage in broader investment and commercial activities can generate significant benefits. These can stem from informational advantages, which banks could obtain from firms through the various services and products they offer. Such informational advantages may lead to banks establishing close, long-term relationships with client firms. Fewer restrictions on bank operations may lead to economies of scale and scope: for example, economies of scope can arise from access to borrower information, management of different types of risk for customers, economies in distribution and marketing of financial services, and reputational economies. On the bank consumer side, this might result in lower search, information, monitoring and transaction costs. Moreover, economies of scale can lead to potential savings in overhead, back-office bank costs, information technology and investment banking-type operations. Proponents of universal banking further argue that allowing banks to engage in investment and commercial activities can help banks better manage risks and diversify risks. Thus, in periods of slow lending activity, universal banks can generate higher profits on the investment side. Therefore, income streams will be diversified and bank profits would be more stable. In addition, cross-selling of different products and services can help increase bank revenues, and thus increase

banks' franchise values. The latter may bring about more prudent behavior by banks.

Existing empirical evidence mostly suggests that there are benefits to gain from fewer regulatory restrictions on bank activities. For example, Berger and Udell (1996) find that broad-banking powers are associated with a lower cost of capital and less stringent cash-flow constraints. Kroszner and Rajan (1994) establish that universal banks did not abuse investors and underwrite low-quality securities in the U.S. before the passage of the Glass-Steagall Act of 1933[14]. They find that the market rationally accounted for possible conflicts of interest, and this constrained banks to underwrite good-quality securities only.

Barth, et al. (2004) also look at the extent to which banks can engage in commercial and investment activities, such as securities underwriting, provision of insurance services and real estate services. They also gather information whether banks may be owners in non-financial firms. The results of Barth et al. (1999) on a sample of 60 countries and of Barth et al. (2001), using an expanded sample of 107 countries, indicate that restrictions on bank activities, and specifically restrictions on securities activities, affect bank performance (measured as the share of private credit in GDP) negatively. Furthermore, more restrictions on bank activities are associated with bank supervisory systems less open to private monitoring, with more barriers to entry in banking and with more government ownership of banks. Since the empirical evidence does not identify some tangible benefits from restricting bank activities, it is argued that the preferred option may be to impose less restrictions.

We assume that this logic applies to the transition economies as well. Of course, it may be argued that commercial banks in these countries are relatively young, and perhaps some limitations of broad-based banking are warranted to avoid abuses and

[14]The US Glass-Steagall Act of 1933 prohibited commercial banks to engage in investment banking activities. The absence of universal banks in the United States persisted for most of the 20th century.

systemic collapse. Further, universal banks would be more difficult to supervise and monitor – which may be even harder for bank supervisors in these countries. Nevertheless, in line with the discussion above, we have assumed that fewer restrictions on bank activities would benefit these markets, and have assigned weights accordingly[15]. In Q7, securities underwriting and insurance activities (answer options c) and d)) used to get penalised at fractions of a point (-0.25 and -0.35 accordingly) in accordance with a view for less integrated banking. This is no longer the case. Now both answer options get weights of 1/6. The same weights are also awarded to lending and deposit-taking activities and other activities. We also award 1/6 of a point to banking laws specifying a list of permissible bank activities. Question Q8 also has revised weights. Previously, presence of prohibited activities for banks was awarded half a point, with the other half awarded for specific legal provisions prohibiting securities underwriting and dealing and participation in investment funds. Now a lack of such prohibitions scores 1 point. Finally, Q9 previously used to favor the presence of legal restrictions on banks' holdings of public or private securities, with 1 point previously awarded for a positive answer. In accordance with the above review and since restrictions on such holdings of securities, particularly on banks' holdings of shares in non-financial firms are associated with no tangible benefits in terms of bank performance and stability, we have also decided to award 1 point to answers indicative of absence of such restrictions. Thus, we build an index of Permissible Bank Activities and compare it to the Permissible Activities data by BCL in Chapter 4.

[15]We must note a revision of weights on these questions compared to an earlier version of the LIS data.

2.4.3.5 Supervisory Power

One of the main findings of Barth et al. (2004) and Beck, Demirguc-Kunt and Levine (2003c) is that official supervisory power is associated with more financing obstacles for firms and more corruption and need for special connections in raising external finance. Powerful supervisory agencies, which directly monitor banks, are found to hinder financial development. Supervisory power is measured as a composite index of 14 dummy variables and constructed as a principal component indicator. Among these 14 sub-components are the BCL survey answers to whether the supervisory agency can meet up with external bank auditors without the approval of the bank; whether the law mandates that external auditors communicate directly with the bank supervisory agency in case of presumed involvement of bank directors and managers in illicit activities, fraud, or insider abuse; whether bank supervisors can take legal action against auditors for negligence; whether or not off-balance sheet items are disclosed to supervisors. Among the ingredients of the supervisory powers index are also powers of the supervisory authority to intervene in troubled banks through corrective actions, to initiate bank restructuring, or to declare bank insolvency. For example, whether or not the supervisory agency can order bank directors to constitute provisions to cover actual or potential losses is a measure of supervisors' powers to prevent or correct problems. Other powers, which measure prompt corrective actions by bank supervisors, are whether the supervisors can force a bank to change its internal organizational structure, or order bank directors to suspend distribution of dividends, bonuses or management fees. Declaring insolvency powers are proxied by whether the bank law authorizes the supervisory agency to declare a bank insolvent, such that this declaration supersedes the rights of shareholders, and whether the supervisory agency is authorised to intervene in an insolvent bank by suspending bank ownership rights. Finally, restructuring and reorganization powers measure the degree to which supervisors can restructure and reorganize an insolvent

bank. Specifically, these are proxied by the powers of the supervisor to supercede shareholder rights, to remove and replace bank management, and to remove and replace bank directors.

The LIS also contains a number of questions which could serve as a useful proxy for bank powers. Indeed, many of these were built into the survey with the idea that having powerful supervision can be beneficial. Most of these powers are envisaged by the Basle Core Principles (1997). To determine how these powers afforded to bank supervisors affect bank performance and stability is an empirical issue, which will be addressed in Chapter 4. Here we describe the survey questions, whose answers constitute our index of Supervisory Powers, and compare it with the BCL index of Supervisory Powers. Since the LIS was designed to measure to what extent banking laws were in agreement with the Core Principles, many of the survey questions were designed and weighted with the Core Principles as a benchmark. For instance, Q5 asks whether bank supervisors are authorised to conduct on-site examinations of banks, how often such on-site examinations of banks are conducted, and whether the supervisory authority has professionally-trained examiners capable of conducting such examinations. This is modeled closely on Principles 16 to 18 of the Basle Core Principles. These specify that a system of effective supervision should combine both elements of off-site and on-site supervision, and that bank supervisors should have a means of independent validation of supervisory information either through on-site examinations or use of external auditors. Therefore, on-site examinations are perceived as a check on the accuracy of reports and financial information which banks submit to the supervisory agency. The weighting of Q5 favors on-site examinations of banks (awarding a 1/4 of a point for the legal need for such on-site supervision), and awards more points for more frequent such examinations (with more than one on-site bank visit by supervisors scoring 1/2 of a point). Presence of bank examiners trained and capable of conducting effective on-site examinations gets a further 1/4

of a point. Thus, the answers to Q5 form the sub-index of Supervisory Powers to Conduct On-Site Bank Examinations. Q3 and Q4 are related to ongoing supervision methods, and garner information about the types of documents banks are obligated to provide to the supervisory agency, and the frequency with which supervisors collect and review such documents. A wider variety of financial documents given to supervisors, as captured by question Q3, is preferred to less documents, with each type of document gaining equal fractions of a point $(1/5)$[16]. Higher frequencies of supervisory collection and review of the prudential reports, as given in answers to Q4, is interpreted as a positive feature of bank supervision, or indeed as effective bank supervision. Therefore, higher frequency ratings (on the usual 1 to 5 scale) are awarded higher weights, ranging from 0 to 1 and increasing by an increment of 0.25.

Another set of LIS questions is also concerned with supervisory powers. Q13 for instance asks whether certain bank activities require prior approval by the Regulator. The question tracks whether regulatory approval is needed for a bank before it engages in mergers and acquisitions; before it introduces any changes in its ownership and control structure; and before it enters into a new line of business activity. The latter is related to competition regulation, which is discussed in the next sub-section. Legal requirements for each of the three approvals scores 1/3 of a point; lack of such a requirement scores zero. This weighting again reflects the ideas behind the Basle Core Principles regarding transfer of bank shares and major acquisitions and investments by a bank (Principles 4 and 5). Since Q13 is about regulation of bank structure, we may also consider it as one of the Competition Regulatory variables.

Finally, Q31 and 32 look at supervisory powers to undertake corrective actions against banks. More specifically, Q31 assesses whether bank supervisors have the

[16]Here we have introduced a small revision in the weight previously awarded to answer option b) Call reports by moving it from 0 to 1/5. Accordingly, the previous weight assigned to category "Other" has now been changed from 1/5 to 0.

authority to undertake corrective measures against banks for violations of bank laws, and tracks whether it is authorised to revoke bank licenses, impose civil fines and penalties; and make banks undertake corrective actions. Under the assumption that a powerful regulator is beneficial, supervisory authority to undertake all these corrective actions scores maximum points. This is an extensiveness question. Q32 then asks about the frequency with which banks found in violation of the law, have been penalised by the supervisors. It is an effectiveness question, measured on the 1 to 5 rating scale.

2.4.3.6 Competition Regulatory Variables

The LIS collects data about the legal entry requirements for banks. Thus, Q12 asks what kind of information must be provided prior to the establishment of a financial institution. Again, more comprehensive entry requirements are viewed as being desirable, and the total number of points scored depends on such a comprehensive disclosure of information. Thus, if the applicant for a bank license must submit before the Regulator the bank's ownership structure; the names and information about the directors and senior managers, including their professional qualifications; the bank's operating plan, financial projections and sources of capital, then the maximum 1 point is awarded (each of the five entry requirements scores 0.2 points). This assessment is based on the assumption that such entry requirements are prudent and needed; to assess whether they are excessive is an empirical question. As before, this question and its weighting reflect the Basle Core Principles (1997), in particular Principles 2 and 3. The ranking of the transition economies in terms of entry requirements shows that, generally, legal requirements for opening a bank are comprehensive – more than half of the sample countries score at least 0.9 points, indicating more requirements. Among the most restrictive (or prudent) are Armenia, Belarus, FYR Macedonia, Georgia, Kyrgyzstan, Moldova and Uzbekistan. The

more advanced transition countries rank in the middle around the 0.8-0.9 mark.

2.4.3.7 Capital Adequacy Requirements

Traditionally, capital is seen as a buffer against bank losses. Bank capital requirements are therefore seen as a positive feature of regulation, reducing risk-taking activities by bank-managers and ensuring that bank stability is maintained, e.g. Dewatripont and Tirole (1994). There are other theoretical models, however, which raise doubts about the ability of capital requirements to reduce risk-taking behavior. For instance, Thakor (1996) shows that risk-weighted capital requirements may actually increase credit rationing by banks. Gorton and Winton (1995) argue that higher capital adequacy raises the cost of capital. Therefore, theoretically, there is a debate about the need for and benefits of capital requirements for banks.

Barth, Caprio and Levine (2004) attempt to answer this question empirically. Their database on bank supervision collects information about overall capital stringency. They take into account whether the capital requirement reflects certain risks and deducts certain losses from capital before minimum capital adequacy is determined. For example, their index of Overall Capital Stringency reflects whether the capital-asset ratio is risk-weighted according to the Basle guidelines; whether the minimum ratio varies with market risk and with a bank's credit risk; whether the market value of loan losses not yet realized in the accounting books is deducted from capital before calculating the capital adequacy ratio; whether unrealized securities and foreign exchange losses are likewise deductible; etc. Presence of these features scores 1 point, and higher values of the index mean greater capital stringency. A second index of Initial Capital Stringency measures whether certain funds may be used to capitalize a bank initially and whether the sources of such capital are verified by the bank regulatory authority.

The LIS does not go into this level of detail regarding capital adequacy. It has

two questions concerning capital requirements. First, Q29 asks whether banks need to adhere to established capital requirements. A positive answer scores a fraction of a point (1/6). The next sub-question asks whether capital requirements are set in accordance with those prescribed by the Basle Capital Accord, i.e. whether risk-adjusted capital requirements are the norm. Capital requirements are normally prescribed in banking laws, hence the question is concerned with the extent of the law. This part of Q29 scores 5/6. The next question, Q30, asks whether the laws clearly describe capital requirements and whether capital requirements are normally understood by bank managers. This is an effectiveness question as it is attempting to measure how clear and practicable these provisions are. It is measured on the usual 1 to 5 frequency rating scale.

2.5 Some Methodological Concerns

Having outlined the rationale behind the Securities and Banking Law sections of the LIS (we do the same for the contract enforcement section in Chapter 5), we briefly outline next two issues which may be problematic: the method of assigning weights to the LIS questions described above, and the distinction between extensiveness of the law and effectiveness of the law, as measured by the respective legal indices..

2.5.1 Question Weights

As explained in the previous section and Appendices 2.A to 2.D, we have undertaken some changes in absolute question weights, with the purpose of treating all questions equally in the aggregation of the individual scores; changed some intra-question distribution of weights, such as the effectiveness rankings on a 0 to 1 5-point scale, as well as changed intra-question weights when economic theory necessitates so. A legitimate question is whether our results and country rankings are sensitive to

the weights employed, particularly whether relative rankings change if we attach unequal weights to some questions, which are deemed more important than others.

To glean more information on this, we have conducted a simple test, using the Banking Law data. We test for example how the individual question scores change if we revert back to the original internal weights for Q26, Q28 and Q30. Therefore, we change from the following 5-point scale – 0, 0.25, 0.5, 0.75 and 1 to the old scale for some effectiveness questions – i.e. 0, 0.2, 0.3, 0.8 and 1. Therefore, the old scale attached lower values for frequency answer "Sometimes", as well as a lower value for frequency answer "Rarely". Conversely, it assigned a higher value for answer "Frequently". The weights attached to the two extremes points are the same. Q26 is essentially our banking effectiveness index of external audit effectiveness (EXT_AUDIT_EFF), while Q28 is equal to the index of effectiveness of consolidated bank examinations (CONS_EXAM_EFF). Both are found significant for private credit and liquid liabilities in Chapter 4. We find that recalculating these variables, using the old weighting scale, does not change the relative ranking or the significance of the variables. In fact, the correlation coefficient between the variable, using old and the variable, using the new weighting scale, is 0.98 and 0.96 for EXT_AUDIT_EFF, and CONS_EXAM_EFF respectively. Employing each in the basic regression for PRIVATE CREDIT, controlling for other variables, does not change the results – CONS_EXAM_EFF retains significance at the 5% level. The results for EXT_AUDIT_EFF also hold, but the latter's significance drops to the 10% level. Conducting a similar comparison between the same variable – weighted differently – gives the same results for Q30.

We also test how a change in overall question weights will affect the aggregate indices – in this case, we decide to attach a higher weight to certain questions, which previously scored 1, and see whether our results are sensitive to such a change. Since, however, most of our indices are now disaggregated, and the focus is not on aggregate

but rather on disaggregated indices based on different aspects of the law, it is not anticipated that any such change will affect our results.

2.5.2 Contradictory Answers by Lawyers from the Same Country

A limitation of the methodology is also the fact that the LIS allows for conflicting answers. For example, scores are averaged across all answers to a particular question from respondents from the same country; however, no restriction is imposed on ensuring that the answers are the same or that contradictory answers are eliminated. The EBRD approach was always to treat such contradictory answers as another symptom of deficiencies in the legal system – presumably, when practising lawyers from the same country are in disagreement about a provision of the law and/or its enforcement, this signals that unclarities and ambiguities exist, e.g. Ramasastry (2002). The indices employed in the thesis – for all their differences with the previously published ones based on the LIS – do follow the same rule, i.e. when respondents from the same country provide differing answers to the same questions, we treat each answer equally, apply the intra-question weights and derive the country question score as a simple average.

This procedure is contentious – after all, it may be argued that we are not capturing the precise state of the existing laws even in our extensiveness indices, since we allow for conflicting answers to enter the aggregation. However, short of answering every question according to the law, and then eliminating or discounting the answers which are not in agreement with the law, we do not have a clear alternative for dealing with this problem. The most neutral thing to do is most likely to disregard potential differences with the existing law, and to average across all answers in the way that we do. Furthermore, as we have been emphasizing all along, the LIS measures perceptions, so we would not expect that opinions even to the exist-

ing provisions would always be the same. It is conceivable that lawyers may think differently about a certain provision depending on whether it is used, or whether a way of contracting around it exists. Therefore, we will be throwing out useful information value if we were to harmonize answers to extensiveness-questions from the same jurisdiction.

Having said that, we explore an alternative mechanism for dealing with the problem of conflicting answers – namely, adopting a "majority rule", whereby we choose the answer to be the one that the highest number of respondents from the same country picked, and ignoring the other answers to that question. Again, we conduct a sensitivity test to see whether country scores would be systematically affected by such an approach in aggregation of scores. Suppose we want to test this for Q24 from the Banking Law section, which assesses the extensiveness of the law with respect to who writes the country's accounting rules. The answers are summed up in the index of ACCOUNTING, which we find highly significant in the PRIVATE CREDIT regressions of Chapter 4. Table 2.4 shows the current values of the ACCOUNTING index, and the amended values, calculated using the "majority rule". For illustration, Bulgaria has 16 survey respondents, 15 provided answers to this question. Of these, 13 indicated answer option "Primarily by the government", and two of them provided answer option "By both the government and the professional accounting community". Since the majority of respondents picked the former, we then ignore the two latter answers, and accept the final answer for this question for Bulgaria as being "Primarily by the government". Since its associated weight is 0 (i.e. less value for government involvement in accounting rules writing), and the associated weight of the answer option "By both the government and the professional accounting community" is 0.5, we note a reduction in the aggregate score for this question for Bulgaria. In two cases we have an equal split in answers – for Albania and Romania – where 2 (3) respondents pick the first answer option,

and 2 (3) respondents pick the third one. In these two cases, we adopt the average weight between the two options as the question weight (0.25).

We find that the correlation between the country scores is high and positive (0.90), and significant at the 1% level. Furthermore, the ACCOUNTING_MAJ index maintains its significance in the PRIVATE CREDIT regressions (Chapter 4). So the results are robust to changes in the aggregation procedure, whereby conflicting answers from lawyers form the same country are resolved through a majority rule, whereby the answer picked by the majority of respondents is chosen as the final answer.

2.5.3 Legal Extensiveness and Legal Effectiveness

As mentioned earlier, we do retain in the thesis the classification of LIS questions into extensiveness- and effectiveness-related. The EBRD definitions of the two concepts emphasize that extensiveness questions refer to the extent or scope of the law – whether or not it has essential elements needed to achieve its purpose, such as prohibit insider trading activity, for example. Effectiveness, in contrast, refers to the enforceability and enforcement of the law, and the mechanism for achieving its objectives. As we reviewed the rationale for question weights earlier, we also noted the type of question – extensiveness or effectiveness. In several instances, which we specifically highlight, we have re-defined some of the question classifications to the other type. In this sense, our understanding of the two concepts differs somewhat from that of the EBRD.

Ramasastry (2002) provides a useful account of the EBRD Legal Indicator Survey in a historical perspective. She argues that at the outset of implementation of the survey – in the mid-1990s – countries tended to score high on extensiveness – as new laws were being passed, but had considerably lower effectiveness scores. While this trend continued for some time, by the end of the decade, some jurisdictions had

Table 2.4: Legal Indices of ACCOUNTING Aggregated Through Different Processes, by Country

Country	ACCOUNTING, average	ACCOUNTING, majority
Albania	25.00	25.00
Armenia	0.00	0.00
Azerbaijan	0.00	0.00
Belarus	0.00	0.00
Bulgaria	6.67	0.00
Croatia	38.89	0.50
Czech Republic	9.09	0.00
Estonia	42.86	0.50
FYR Macedonia	0.00	0.00
Georgia	0.00	0.00
Hungary	33.33	0.50
Kazakhstan	10.00	0.00
Kyrgyzstan	16.67	0.00
Latvia	37.50	0.50
Lithuania	0.00	0.00
Moldova	12.50	0.00
Poland	21.43	0.00
Romania	25.00	0.25
Russian Federation	2.63	0.00
Slovak Republic	11.11	0.00
Slovenia	83.33	100.00
Ukraine	0.00	0.00
Uzbekistan	37.50	0.00

Correlation coefficient: 0.8981.

reversed the trend, i.e. had higher effectiveness than extensiveness. She argues that this may be happening due to lawyers believing that, despite of deficiencies and unclarities in the law, judges and litigants have developed customs and practices that allow the legal system to function reasonably well.

Judicial reforms undertaken in most of the transition economies are another source of improved perceptions about effectiveness. What is clear, however, is that since both concepts are built upon lawyers' perceptions, the clear dividing line between them – such as extent-of-law questions and enforcement questions, is sometimes hard to maintain. Therefore, in a certain sense, extensiveness and effectiveness may also be both picking up the same effects – which would also explain the fact that they are generally correlated.

Due to these conceptual issues, we restrict somewhat our use of the two concepts – and utilise them mainly in the analysis of securities laws in Chapter 3. Our approach is not to adopt overall extensiveness and effectiveness proxies for the law, but rather to focus on the substantive aspects of the laws, and to look at thematic and disaggregated legal indices. Hence, the dichotomy of legal extensiveness and legal effectiveness – while still used – is less pertinent for the analysis to follow.

2.6 Conclusion

In this chapter we outlined some of the main arguments, justifying the use of legal survey data as a tool to measure perceptions of how extensive and effective the laws in the transition economies are. Among the pros of using such data are the potential for gathering information from the users of the law as opposed to coding of the law by scholars based in a foreign country with no immediate understanding of all the other related laws or legal institutions; this approach can generate potentially useful data not about the exact state of the law, but about the perceptions of its users about its state and enforcement. Both approaches are useful in measuring the law – but

measure different things. Yet, to the extent that most respondents would agree on basic legal provisions in financial laws – as covered by this thesis – we would expect some correlation between the perception-based measures and other measures, based on coding the actual laws. Another positive feature of the legal survey approach based on lawyers' perceptions is that – while it does not paint a picture of the exact state of the law – it can provide survey results users with an idea about disparities in legal thinking, due to ambiguous laws or unclear laws. This is an important point. Finally, among the pros of this approach is the scope for repeat interactions over many years with the same law firms, used as respondents – potentially increasing the value of the data and tracking changes in the law.

As explained, however, the method adopted suffers from some distinct drawbacks. Some of these relate to the survey instrument and its implementation. This is a self-administered survey, and this may lead to respondents editing their answers or to question order effects, which are hard to anticipate. Unlike structured face-to-face survey interviews with trained survey enumerators, the LIS was entirely self-administered. This aspect may affect the quality of the answers – due for instance that the survey was filled in by a less experienced lawyer, or due to insufficient time devoted to its completion. Second, survey questionnaires are always in need of improvement. Usually pilot surveys are conducted to see how respondents interpret questions and choose answers, and the questions are modified accordingly. The LIS was altered in 1999 to include the 5-point scale effectiveness questions. In a sense the experience with the 1999 financial law section in 1998 was the pilot (this was its first run), and the alterations in 1999 reflected the experience from the previous year. Another related drawback is that we have not conducted any tests to see whether there are persistent question order effects (there is some indications that such may exist, as in some instances answers to essentially the same question in different sections of the survey seems to produce different results). This remains an

under-explored aspect of the data.

As explained in earlier sections there is no unique way of weighting the questions and aggregating the indices. Our approach has been – in contrast to the EBRD one – to treat questions equally, and to assign weights on the basis of underlying economic concepts which we are testing for – e.g. such that disclosure requirement legal rules should be rewarded since they alleviate market informational asymmetries. Occasionally, our weights differ from those that the EBRD Legal Team attached to the questions. In some instances, as in the Banking Law section, the question weights also reflect internationally accepted principles, such as the Basle Committee's Core Principles on Effective Bank Supervision[17]. It must be stressed, however, that no universal laws exist and internationally adopted legal principles may not be appropriate for every country. This is a common shortcoming of all data, based on legal surveys, which imposes a weighting structure in assessing the law.

Despite these limitations of the survey approach, such data can be useful in comparing perceptions of legal rules and how they work across countries. As mentioned at the beginning, such surveys of lawyers have become very popular in recent years in economic research related to the institutions and their impact on economic and financial development. The LIS data have been subjected to systematic cleaning, and is shown to be robust to alternative weighting, aggregation of answers and to correlate well with our perception-based indices of lawyers, where available (Chapter 5 offers a comparison in this regard). Therefore, we use the data from the Securities Law, Banking Law and Contract Enforcement sections in the chapters, which follow.

[17]Other sections' weights also reflect such principles: for instance, the Pledge Law section (not used in the thesis) was weighted in accordance with the so-called 'best practice" law – the EBRD Model Law on Secured Transactions. The Securities Law section weights also reflect the Objectives and Principles of the International Organisation of Securities Commissions (IOSCO).

Appendix 2.A Review of Changes in Banking Weights

Let us turn to the sources of differences between the TR99 scores and the thesis scores one by one. We will review each of the 6 survey sections, and explain how the question weights have been changed and the logic behind the change. Let us start with the Banking Law section first, and choose Georgia since, as mentioned above, it underwent a change from 30.59 to 48.96 on its Banking extensiveness (EXTBANK99) score. As explained earlier, three law firms from Georgia completed the survey, and we refer to their coded answers as Geo1, Geo2 and Geo3. Their respective scores on banking extensiveness were 0.00, 20.24 and 71.53, giving an average of 30.59, which was translated into a score of 1 in the Transition Report 1999. However, the subsequent cleaning of the data by the author noted that it was initially overlooked that Geo1 had a zero score not because the answers indicated such a poor legal extensiveness system, but because there were no answers provided at all. Thus, this was corrected, whereby the average score should have been 45.88. What then explains the remaining difference between the latter value and the 48.96 score used in the thesis? At this juncture we review the weighting for banking extensiveness.

In terms of the Georgia example, we notice that the old Geo2 score of 20.24 is equal to 4.25 divided by 21 (the maximum sum of weights) and the Geo3 score of 71.53 is equal to 15.02 divided again by 21. The new Geo2 score is equal to 5.00 divided by 20 (the new maximum sum of weights), and the new Geo3 score is equal to 14.58 divided again by 20. The changes in the denominator affect every response in the same manner, the maximum points that can be scored on banking extensiveness have dropped by 1 point from 21 to 20. We investigate the source of this reduction, and find that this is entirely due to changes in weights. We document these changes, and how they affect the extensiveness sum of absolute weights in Tables 2.7 and 2.8.

Then we explore the differences in the numerator. Assuming no other changes,

we would expect that the changes are due to changes in weights too. Therefore, we employ the new weights on the old coded templates for Geo2 and Geo3, and find that this is indeed the case. Applying the new weights in the aggregation of the answers in the old coding, we find that the aggregatepoints garnered by Geo2 shift from 4.25 to 5.00, and the aggregate points garnered by Geo3 shift from 15.02 to 14.58. The fact that we observe a reduction in the latter case, and an increase in the former is due to the interaction of weights changes and particular answers chosen by the respondents.

Let us now proceed to a question-by-question comparison of new and old weights for the Banking section of the survey.

We will first look at the differences in intra-question weights. As shown in Tables 2.5 and 2.6, questions 1 to 14 have the same intra-question weights as in the Transition Report. Q15 is an effectiveness-type question with a frequency rating scale of 1 to 5, mentioned earlier. This question used to have the following weight structure: 0 for "Never", 0.2 for "Rarely", 0.3 for "Sometimes", 0.8 for "Frequently" and 1 for "Almost Always". This scale was adopted for many of the effectiveness questions previously alongside the other possible scale of 0, 0.25, 0.5, 0.75 and 1. In the thesis, we have switched to using only the latter. Hence, the internal weights for Q15, and for all other effectiveness questions, using the former set of weights for this particular rating scale, have been changed.

At this point we need to mention something else. In moving to a new set of weights, we also broke down some of the survey questions into separate questions. This was necessary purely for convenience purposes. For instance, previously some questions carried a higher weight only because they combined several sub-questions. To make matters simpler, we separated such sub-questions into separate questions and, if necessary, changed their weights.

Let us go further with the review of intra-question weights. Table 2.5 provides

a mapping of old questions into new questions and old weights into new weights.

The old sum of absolute weights for extensiveness used to be 21, now it is 20 due to the changes in internal and absolute weights as shown in the Tables 2.7 and 2.8. We already mentioned that this number is the denominator of our extensiveness scores for each survey entry. In our example of Georgia, as shown in Table 2.9, the two old scores were 4.25/21 for Geo2 and 15.02/21 for Geo3. The new scores are 5.00/20 and 14.58/20. We have already explained the source of the difference of -1 in the denominator. The numerator differences are due to changes in interim and internal (intra-question) weights[18]. If we employ the new set of such weights and replace in the formulae calculating the indices, we find that with the new weights the score of 4.25 of Geo2 becomes 5.00 and the score of 15.02 for Geo3 becomes 14.58. We will conduct the same checks for each survey entry ahead.

We do the same checks for banking effectiveness scores of Geo2 and Geo3. Again, the old scores were as follows: 6.11 for Geo2, which was equal to 0.80/13.10 (the number of points collected by Geo2, divided by the maximum number of points which could be collected on banking effectiveness), and 58.02 for Geo3, equal to 7.60 divided by 13.10. The new scores are 5.77 for Geo2 (0.75/13.00) and 65.38 for Geo3, equal to 8.50 divided by 13.00. The difference in the denominator is due to the -0.1 net difference from changes in absolute effectiveness weights. This accounts for changes in the score denominator. The numerator changes are due to changes in internal and interim weights. We use the new weights in the old spreadsheet and

[18]Intra-question or internal weights are used to weight the various parts of a single quesiton (to rank answer options essentially). Interim weights are used as an intermediary stage. Once the answer options of a single question are weighted and summed to give a score, this score is multiplied by the interim weight to give a final score. This was mainly used with the old set of weights to give a higher than 1 score. Suppose a question scored 1 by internal weights. Then we would multiply this score by the interim score, of say 2, to get a final score of 2. Then the absolute score of 2 was essentially the product of the score by internal weights and the interim score. Since absolute scores are all equal to 1 under the new set of weights, so are all interim weights.

Table 2.5: Review of old and new internal weights on Banking questions

Old question	New question	Old internal weights	New internal weight
E1	Q1	0.25, 0, 0.75 and 0.25	Same
E2a	Q2	0, 0.25, 0.5, 0.75 and 1	Same
E2b	Q3	0.2, 0, 0.2, 0.2, 0.2, 0.2	Same
E3	Q4	0, 0.25, 0.5, 0.75 and 1	Same
E4	Q5	0.25, 0.5, 0.25, 0, 0, and 0.25	Same
E5	Q6	1	Same
E6	Q7	0.2, 0.2, -0.25, -0.35, 0.2 nad 0.2	Same
E7	Q8	0.5, 0.25 and 0.25	Same
E8	Q9	1	Same
E9	Q10	1	Same
E10	Q11	1	Same
E11	Q12	0.2, 0.2, 0.2, 0.2, 0.2	Same
E12	Q13	0.33, 0.33, 0.33	Same
E13	Q14	0.5, 1/8, 1/8, 1/8, -1/4, 1/8	Same
E14	Q15	0, 0.2, 0.3, 0.8, 1	0, 0.25, 0.5, 0.75, 1
E15	Q16	0.75, 0.25	Same
E16a	Q17	1	Same
E16b	Q18	1, -0.5, -0.25, 0.5, 0.75	Same
E16c	Q19	0.25	1
E17	Q20	0.25	1

Table 2.6: Review of old and new internal weights on Banking questions

Old question	New question	Old internal weights	New internal weight
E18	Q21	0.5, 0.25, 0.25	Same
E19a	Q22	1	Same
E19b and c	Q23	0.5, 0.3, 0.2, 0, 0.1	1, 0.6, 0.4, 0, 1
E20	Q24	0, 1, 0.5	Same
E21a and b	Q25	0.25, 0, 0.75	Same
E21c	Q26	0, 0.2, 0.3, 0.8, 1	0, 0.25, 0.5, 0.75, 1
E22	Q27	0.5	1
E23	Q28	0, 0.2, 0.3, 0.8, 1	0, 0.25, 0.5, 0.75, 1
E24a and b	Q29	0.25, 1.25	0.17, 0.83
E24c	Q30	0, 0.2, 0.3, 0.8, 1	0, 0.25, 0.5, 0.75, 1
E25a, b, c and d	Q31	0.25, 0.25, 0.25, 0.25	Same
E25e	Q32	0, 0.25, 0.5, 0.75, 1	Same
E26	Q33	0.5, 0, 0.25, 0.5	Same
Interim weights changes			
Old question	New question	Old interim weight	New interim weight
E1	Q1	1.25	1
E4	Q5	1.25	1
E18	Q21	2.5	1
E20	Q24	1.5	1
E23	Q28	1.5	1

Table 2.7: Review of old and new absolute weights on Banking questions

Old question	New question	Old absolute weight	New absolute weight
E1	Q1	1.25	1
E4	Q5	1.25	1
E16a, b and c	Q17, Q18 and Q19	2.25	3 (1 per new question)
E17	Q20	0.25	1
E18	Q21	2.5	1
E19	Q22 and Q23	1.6	2 (1 per new question)
E20	Q24	1.5	1
E22	Q27	0.5	1
E23	Q28	1.5	1
E24	Q29 and Q30	2.5	2 (1 per new question)

formulae, and confirm that with new weights the 0.80 old points of Geo2 become 0.75, and the 7.60 points of Geo3 become 8.50.

At this point, we go and check the overall banking score (BANK99). The old overall banking score for Georgia used to be 29.98 (based on three surveys). The correct figure (averaged over Geo2 and Geo3 only) should have been 44.97. The new figure now (averaged over Geo2 and Geo3) is 43.69. The old Geo2 score is 17.74 (equal to 6.05 divided by 34.10), and the old Geo3 score is 69.27, equal to 23.62 divided by 34.10.

The new Geo2 score is 17.42, equal to 5.75 divided by 33, and the new Geo3 score is 69.95, equal to 23.08 divided by 33. Obviously, the change of maximum score (the denominator) from 34.01 to 33 is due to the changes in absolute weights in all questions (-1 for extensiveness and -0.1 for effectiveness). The changes in the points actually gathered by the two entries are checked by using the new weights in

Table 2.8: Differences between old and new absolute weights on Banking questions

Old question	New question	Type	Difference
E1	Q1	Ext	-0.25
E4	Q5	Ext	-0.25
E16a, b and c	Q17, Q18 and Q19	Ext	+0.75
E17	Q20	Ext	+0.75
E18	Q21	Ext	-1.5
E19	Q22 and Q23	Eff	+0.4
E20	Q24	Ext	-0.5
E22	Q27	Ext	+0.5
E23	Q28	Eff	-0.5
E24	Q29 and Q30	Ext and Eff	-0.5 (ext)
Change in EXTBANK99 maximum score			-1.0
Change in EFFBANK99 maximum score			-0.1
Change in BANK99 maximum score			-1.1

the old formula. Here we find a summation mistake in the old formula, which was corrected in the thesis data. Thus, the old weights points of 6.05 for Geo2 should have been 5.05, which turns into 5.75 using new weights. For Geo3, the old weights points of 23.62 should have actually been 21.28 (due to the mistake), and when corrected and made to using the new weights, turns into 23.08.

Next, we review the changes in weights assigned to the Capital Markets questions.

Table 2.9: Review of old and new scores for Georgia

	Old score	New score
Banking Extensiveness		
Geo1	0.00=0/21	N/A
Geo2	20.24=4.25/21	25.00=5.00/20
Geo3	71.53=15.02/21	72.90=14.58/20
Banking Effectiveness		
Geo1	0.00=0.00/13.10	N/A
Geo2	6.11=0.80/13.10	5.77=0.75/13
Geo3	58.02=7.60/13.10	65.38=8.50/13
Overall Banking		
Geo1	0.00=0.00/34.10	N/A
Geo2	17.74=6.05/34.10	17.42=5.75/33
Geo3	69.27=23.62/34.10	69.95=23.08/33

Appendix 2.B Review of Changes in Securities Section Weights

Similarly to the banking weights, we present the changes in internal question weights first. Again some effectiveness questions, such as Q6, Q10, and Q22 change from the old rating scale of 0, 0.2, 0.3, 0.8 and 1, to the same five-point scale, whereby points are added in equal increments: 0, 0.25, 0.5, 0.75 and 1. Since the initial assignment of two scales was rather ad hoc, we decided to treat all effectiveness questions of this type (on a five-point frequency rating scale) the same way. In all other instances of changes in internal weights, the changes are due to the breaking

up of a given old question into separate questions, thereby assigning equal values of 1 to the new questions, and, where necessary, maintaining the same proportions as in the old questions. Tables 2.11, 2.12 and 2.13 report this mapping.

Let us now review the capital markets extensiveness part, using Georgia as an example. Here we have three survey entries: Geo1, Geo2 and Geo3. The old average for extensiveness over these 3 entries used to be 74.54; the new average (again over the same three entries) is 72.22. The score of Geo1 used to be 70.28, equal to 8.43 divided by 12.00, Geo2 had previously a score of 85.83, equal to 10.30 divided by 12.00 and Geo3 gathered 8.10 points, which divided by 12, yield a score of 67.50. We show in Table 2.14 that under the new weights, the maximum sum which could be collected on capital markets extensiveness questions is 11, whereas it used to be 12 under the old weights. The new scores for the same three Georgian entries are: Geo1's score is 68.48, equal to 7.53 divided by 11, the new Geo2 score is 82.73, equal to 9.10 divided by 11, and the new score for Geo3 is 65.45, equal to 7.20, divided by 11. The difference in the denominator is clear, we showed that the sum of extensiveness weights is down by 1 to 11. To test the differences in the numerators, we use the same test as before: we employ the new internal and interim weights in the old spreadsheet and formulae, and find that the old points garnered by each of these 3 survey entries turn into the new points once the weights are changed. In other words, with new weights used in the calculations Geo1's old points of 8.43 become 7.53; Geo2's old points of 10.30 become 9.10, and Geo3's old points of 8.10 become 7.20.

Next we review the capital markets effectiveness questions, again through the example of Georgia. The old capital market effectiveness score for Georgia used to be 33.84, the new one is 35.08, both are the average over the scores for the three entries of Geo1, Geo2 and Geo3. Again, it is easy to demonstrate that once we take into consideration the changes in the denominator from 16 to 18 (the maximum

points for capital market effectiveness), and once we factor in the new weights, the sum of old points for each Georgian entry becomes equal to the sum of the new points. We summarise these checks in the Table 2.10.

Finally, we also check Georgia's scores in the overall capital markets scores (CAP99). The old score of 50.78 has changed into 49.17, using the new weights. Both are the averages over the three Georgian entries. The change in the denominator from 28 to 29 is due to the change in absolute weights. In conducting checks over the number of points gathered by each of the three under old and new weights, we have uncovered 2 formulae errors, affecting the old scores. One of these pertains to summation of internal question points for question F2 (new questions Q3 and Q3; another is related to the old question F12 (new question Q19), which has a possibility of Unclear as an answer. Since F12 was not counted in the scores before, but is counted now, the possibility of having an Unclear answer is now taken into account. Third, question F3's answer format was changed from Yes, No, Unclear to a five-point answer scale in the 1999 survey. However, in the old template the answer option of Unclear was preserved, thereby potentially generating scores counted as Unclear answers whenever option 3 on the 1 to 5 scale was chosen. These errors have been eliminated in the new scores, used in the thesis. We then establish that, with these mistakes corrected, the old score of Geo2 should have been 16.73 instead of 16.31. By sheer coincidence the correct old score of 16.73 equals the new scored points of 16.73. This is also corroborated by the sum of scores for Geo2 over extensiveness and effectiveness of capital markets.

Table 2.10: Review of old and new scores for Georgia

	Old score	New score
Capital Market Extensiveness		
Geo1	70.28=8.43/12	68.48=7.53/11
Geo2	85.83=10.30/12	82.73=9.10/11
Geo3	67.50=8.10/12	65.45=7.20/11
Capital Market Effectiveness		
Geo1	22.55=3.61/16	20.05=3.61/18
Geo2	40.16=6.43/16	42.36=7.63/18
Geo3	38.80=6.21/16	42.82=7.71/18
Overall Capital Markets		
Geo1	43.01=12.04/28	38.42=11.14/29
Geo2	58.24=16.31/28	57.67=16.73/29
Geo3	51.10=14.31/28	51.41=14.91/29

Appendix 2.C Review of Overall Scores

The review of overall financial law extensiveness is conducted in much the same manner as the earlier variables. We want to check how the old scores become the new scores, and in so doing, to explain these differences in terms of changes in weights and to identify any other reasons for potential differences. First, the extensiveness score encompasses the scores on all extensiveness-type questions from both the Banking and Capital Markets sections of the survey. We again use Georgia as our prime example. The old score used to be 46.57, the new one is 57.21. The old score was the unweighted average of the scores for Geo1, Geo2, and Geo3. The new score is a weighted average of the banking extensiveness score of Geo2 and Geo3, and the

Table 2.11: Review of old and new internal weights on Capital Markets questions

Old question	New question	Old internal weights	New internal weight
F1	Q1	1	Same
F2a	Q2	1	Same
F2b, c and d	Q3	0.5, 0.25, 0.25	Same
F3	Q4	0, 0.25, 0.5, 0.75, 1	Same
F4a	Q5	2	1
F4b	Q6	0, 0.2, 0.3, 0.8, 1	0, 0.25, 0.5, 0.75, 1
F5	Q7	1.5	1
F6	Q8	0.5, 0.5	Same
F7a, b and c	Q9	1/4, 0, 1/4, 3/8, 1/8, 0	Same
F7d	Q10	0, 0.2, 0.3, 0.8, 1	0, 0.25, 0.5, 0.75, 1
F8a and b	Q11	0.5, 3/20, 7/20	Same
F8c	Q12	0.5	1
F9a	Q13	1	Same
F9b	Q14	0.1, 0.1, 0.1, 0.1, 0.1	0.2, 0.2, 0.2, 0.2, 0.2
F9c	Q15	0, 0.25, 0.5, 0.75, 1	Same
F10	Q16	1	Same
F11a, b and c	Q17	0.25, 0.25, 0.5	Same
F11d	Q18	0, 0.25, 0.5, 0.75, 1	Same
F12	Q19	0	1
F13	Q20	0.5, 0, 0.5, 0	Same

Table 2.12: Review of old and new internal and interim weights on Capital Markets questions

Old question	New question	Old internal weights	New internal weight
F14a	Q21	1	Same
F14b	Q22	0, 0.2, 0.3, 0.8, 1	0, 0.25, 0.5, 0.75, 1
F15	Q23	1	Same
F16	Q24	1	Same
F17a	Q25	1	Same
F17b	Q26	0, 0.25, 0.5, 0.75, 1	Same
F18	Q27	0.5, 0.5	Same
F19	Q28	1	Same
F20	Q29	0.5, 0.5	Same
Interim weights changes			
Old question	New question	Old interim weight	New interim weight
F3	Q4	0.5	1
F12	Q19	0	1

capital market extensiveness scores for Geo1, Geo2, and Geo3. The sum of absolute weights (the maximum number of points an entry could attain) were previously 33, and are 31 under the new set of weights. This has already been explained by the changes in the total sum of absolute weights for banking extensiveness and capital market extensiveness. The former were shown to be reduced from 21 to 20, and the latter from 12 to 11. Hence the 2-point difference in the total sum of absolute weights for overall extensiveness.

Factoring in all new weights in the old formulae for the three Georgian entries,

Table 2.13: Review of old and new absolute weights on Capital Markets questions

Old question	New question	Old absolute weight	New absolute weight
F3	Q4	0.5	1
F4a and b	Q5 and Q6	3	2 (1 per new question)
F5	Q7	1.5	1
F8a, b and c	Q11 and Q12	1.5	2 (1 per new question)
F9a, b and c	Q13, Q14 and Q15	2.5	3 (1 per new question)
F12	Q19	0	1

we are able to determine that, using the new weights, the old points garnered by Geo1 of 8.43 become equal to the new points of 7.53, the old points of Geo2 of 14.55 become equal to the new points of 14.10, and the old points of Geo3 of 23.12 become equal to the new points of 21.78. We also note that since Geo1 is the entry with no answers provided to the Banking section as mentioned earlier, in averaging across the three entries to derive the final country score we use a weighted average of the type:

$$Ext = \frac{20}{31} \times Extbank + \frac{11}{31} \times Extcap$$

where Extbank is the unweighted average of banking extensiveness for Geo2 and Geo3, and Extcap is the unweighted average for capital market extensiveness for Geo1, Geo2 and Geo3.

The results of these checks are presented in Table 2.15.

Next, we repeat the same procedure to check the overall financial effectiveness scores. The old overall financial effectiveness score for Georgia was equal to 28.23, and averaged over Geo1, Geo2 and Geo3. The new score is 35.29, and is a weighted average of the banking effectiveness for Geo2 and Geo3, and capital market effectiveness for all three entries for this country. Again, changes in the maximum points

Table 2.14: Differences between old and new absolute weights on Capital Markets questions

Old question	New question	Type	Difference
F3	Q4	Eff	+0.5
F4a and b	Q5 and Q6	Ext and Eff	-1.0 (Ext)
F5	Q7	Ext	-0.5
F8a, b and c	Q11 and Q12	Eff	+0.5
F9a, b and c	Q13, Q14 and Q15	Ext and Eff	+0.5(Ext)
F12	Q19	Eff	+1.0
Change in EXTCAP99 maximum score			-1.0
Change in EFFCAP99 maximum score			+2.0
Change in CAP99 maximum score			+1.0

which could be attained (i.e. the denominator) from 29.10 to 31 are attributable to changes in the absolute weights. These explained earlier the drop of banking effectiveness sum of absolute weights from 13.10 to 13, and the rise in the capital markets sum of weights from 16 to 18. Hence, the move from 29.10 in total effectiveness points to 31. Using all new weights, we are able to confirm that old formulae summing up points scores become equal to the new points. For instance, the old points of 3.61 for Geo1 stay the same (by coincidence) under new weights; the old points of 7.23 for Geo2 become equal to 8.38 under new weights, and the old points of 13.81 for Geo3 become equal to 16.21 under the new weights.

As in the extensiveness overall score for Georgia, we use a weighted average due to the fact that Geo1 has no Banking section answers. The overall score is:

$$Eff = \frac{13}{31} \times Effbank + \frac{18}{31} \times Effcap$$

The results of these checks appear in Table 2.15.

Table 2.15: Review of old and new scores for Georgia

	Old score	New score
Overall Financial Extensiveness		
Geo1	25.56=8.43/33	68.48=7.53/11(cap. markets only)
Geo2	44.09=14.55/33	45.48=14.10/31
Geo3	70.06=23.12/33	70.27=21.78/31
Overall Financial Effectiveness		
Geo1	12.40=3.61/29.10	20.05=3.61/18 (cap. markets only)
Geo2	24.83=7.23/29.10	27.02=8.38/31
Geo3	47.45=13.81/29.10	52.28=16.21/31

Appendix 2.D Review of All Survey Entries by Country

Now that we have exhausted all possible checks of weights and changes in scores for Georgia, we replicate the same exercise for all other entries by country. We re-calculate the new scores for EXTBANK99, EFFBANK99, EXTCAP99, EFF-CAP99, EXT99 and EFF99 under old weights for each country entry and calculate the differences, if any, with the old points scored. If there are no mistakes, these differences should be all zero.

This exercise has produced the expected results: differences are indeed found to be zero. One exception related to a mistake in the old scores, which has been corrected already in the scores under new weights. This affected the scores for Kaz3 (one of the Kazakhstan entries), Kyr1, Mac3, Rom6, Sln3, Uzb2, Cro4, Cro8 and Cro9, Est1, Slk4, Cze14, Bul6, Bul11 and Bul12. All these entries share a commonality: respondents to the old question E19, which translates into current questions Q22 and Q23, answered Yes to part1 (whether financial statements are prepared according to international accounting standards, and then went on to answer Yes to part 3 of the old question (which reads "If no, are IAS in the process of being implemented?"). This inconsistency in answers led to the elimination of Yes answers to the latter part for those who answered that IAS are already being used. In other words, when revising the data under the new weights and tabulating question by question scores, inconsistencies of this type were eliminated. While it may be logically possible that IAS are simultaneously being used and also in the process of implementation, in the process of cleaning the data we have chosen to regard the answers to the second part of Q24 only when the answer to Q23 is "No" as per Q24's instruction. Potential differences due to this stem from both double positive answers, as well as from a positive answer to Q23 and an Unclear answer to

Q24. Once this is taken into account, all differences between old and new scores for Effbank and Eff (since Q23 and Q24 are effectiveness questions) are eliminated.

At this stage, in conducting rigorous country by country checks of survey scores, we note that some countries entries were given for the commercial part of the survey, but not for the financial. These are the Russian entry Rus17, the Czech entry Cze3, the Slovak entry Slk7 and the Armenian entry Arm1. These did not provide answers to the financial part of the Legal Indicator Survey.

Finally, the same checks are implemented for the BANK99 and CAP99 scores for all entries by country. The old and new scores for each country entry are compared by re-calculating new scores under old weights and checking that the scores thus derived do not differ from the old scores. This exercise is replicated on each coded survey's entry sheet, and no additional consistency errors are found.

Appendix 2.E Pre-Conditions for Successful Securities Markets

	Asymmetric Information Between Buyers and Sellers of Securities	Self-dealing by Company Insiders and Expropriation of Minority Shareholders
Effective Regulators, Courts and Prosecution	1. Honest, well-resourced Regulator; 2. Good judicial system; 3. Clear procedural rules	1. Same; 2. Same; 3 Same
Financial Disclosure Requirements	1. Extensive disclosure requirements, which allow for independent audit; 2. Good accounting and auditing rules; 3. Independent institution, which writes accounting rules	1. Extensive disclosure of self-dealing; 2. Procedural protections against self-dealing; 3. Ownership disclosure rules; 4. Good overall financial disclosure
Securties Market Intermediaries	1. Competent accountants; 2. Accountant liability for endorsing false or misleading financial statements; 3. Investment bankers, investigating issuers; 4. Competent securities lawyers 5. Underwriter liability for false or misleading disclosure 6. Stock exchange delisting firms for false or misleading disclosure	1. Same; 2. Same; 3. Accounting review of self-dealing transactions; 4. Same; 5. Independent directors; 6. Stock exchange fines and delistings for self-dealing; surveillance operations to catch insider trading.

Company and insider liability	1. Civil liability for companies and insiders for false or misleading disclosure; 2. Criminal liability for insiders who intentionally mislead investors	1. Civil liability for violations of self-dealing rules; 2. Criminal liability for intentional violations of self-dealing rules; 3. Prohibition of insider trading, and its enforcement. Insider trading defined in laws.
Market Transparency	1. Time, quantity and price of stock market trades disclosed promptly; 2. Manipulation of trading prices prohibited and its enfoircement	1. Same; 2. Same
Local Culture	1. Financial press publicizing misleading disclosure; 2. Culture of honesty among market participants.	1. Financial press publicizing self-dealing; 2. Same
Other useful institutions	1. Licensing of intermediaries; 2. Self-regulation of intermediaries; 3. Independent directors; 4. Investment and pension funds, demanding disclosure and providing investable funds; 6. A reasonable tax system	1. A "one share, one vote" rule, reducing opportunities to self-deal; 2. A mandatory take-out bid requirement; 3. Pre-emptive and redemption rights; 4. Reporting of trades by insiders; 5. Investment and pension funds, demanding control of self-dealing; 6. Good bankruptcy system; 7. Good judicial system

Chapter 3

Securities Regulation and Stock Market Development in Transition Economies

3.1 Introduction

Stock markets play an important role in the financial system. The provide a way for companies to raise external finance. This allows financially-dependent firms to grow faster, given the limits on other sources of finance such as bank credit and internal finance. Importantly, better stock market performance is associated with higher growth rates. For example, Levine and Zervos (1998) report that stock market activity, as measured by the turnover ratio, is positively associated with future economic growth. Having well-developed stock markets reduces the risks of a credit crunch as firms become less dependent on bank financing. Furthermore, having a financial structure with more equity and less debt reduces the risks for firms in the case of an economic downturn. Equity markets may also bring benefits in the form of stronger governance of firms' managers and companies' investment decisions. Recent

empirical evidence, e.g. Beck and Levine (2004), suggests that overall financial development and the efficiency of the legal system rather than financial system structure (bank-based versus market-based) affect future economic growth.

Theoretical research also predicts an important role for well-functioning and vibrant stock markets in alleviating market risks and allowing investments in long-run projects to take place. For example, Levine (1991) finds that more liquid stock markets reduce investors' disincentives to invest in longer-term projects because they can easily sell their stake in the project should they need their savings before the project matures. Other models, e.g. Devereux and Smith (1994), emphasize risk sharing in internationally-integrated stock markets. Such risk-sharing induces a shift from low-risk, low-return investments to high-return investments, thus enhancing productivity growth. While some theoretical studies, e.g. Shleifer and Vishny (1986), caution against market liquidity by arguing that higher liquidity makes it easier to sell shares, and thereby reduces shareholder incentives to monitor firm management, with negative repercussions on productivity and growth, the empirical evidence does not find that market liquidity reduces productivity or growth. Altogether, the recent empirical research on the links between stock market development and performance and economic growth lends support to the theories that equity markets enhance productivity in the economy and economic growth.

A large share of the transition economies now have functioning stock markets. Most stock exchanges were established in the early to mid-1990s, and in one group of transition countries served as a mechanism to transfer ownership in the process of privatization[1].

Today, stock markets in transition countries are still largely under-developed. Some of the small stock exchanges have already merged with larger, regional exchanges – for example the Estonian and Latvian stock exchanges merged with the

[1]See Claessens, Djankov and Klingebiel (2000) for a discussion of the origins of transition stock markets.

Helsinki Stock Exchange in 2002. On many of the transition stock markets liquidity and capitalisation remain low, even by emerging market standards. Some countries such as the Czech and Slovak Republics, which developed their markets in the early 1990s through mandatory privatization-related listings, experienced delisting of companies in the second half of the 1990s, after liquidity and disclosure requirements were enhanced and many firms found themselves unable to comply with these requirements. The volume of initial public offerings (IPOs) in recent years is low even in the more advanced transition stock markets. For example, only the Slovene and Polish stock markets recorded a reasonable volume of IPOs during 1999-2002. Thus, the Ljubljana Stock Exchange recorded 111 newly-listed domestic companies during the period from 1999 to 2002 in cumulative terms. The corresponding figure for the Warsaw Stock Exchange was 55 newly listed domestic firms. In contrast, the Prague Stock Exchange saw only 2 IPOs during the same years – by one domestic and one foreign company; the Bratislava Stock Exchange saw 7 newly-listed firms, and the Tallinn Stock Exchange only 1 newly-listed domestic company. IPO activity was also low elsewhere in Central and Eastern Europe and the CIS countries.

There are conflicting views about the role of stock markets in transition. Some scholars make the observation that most of the advanced transition economies have now developed bank-based financial systems, e.g. Berglof and Bolton (2002). According to this view, transition stock markets are going to be subjected to competition from larger regional markets, which offer better disclosure and attract large transition companies. The small market size in many transition economies is also not conducive to securities market development. Furthermore, companies in transition economies are characterized by ownership concentration, which drives firms off the stock market as they become 100% owned by a single owner.

Despite these arguments, in this chapter we investigate whether provisions of securities laws and their enforcement across a cross-section of 19 transition countries

affect their stock market development. This is motivated on grounds of markedly different levels of stock market development in the transition economies.

3.2 Literature Review

This paper follows some recent contributions to the growing literature on law and finance, such as La Porta, Lopez-de-Silanes and Shleifer (2003), and on the role of institutions in economic development, e.g. Djankov et al. (2003b). Law and finance research in the past several years has been instrumental in explaining differences across countries in corporate governance, financial structure and economic growth.

In a recent paper La Porta et al. (2003) study the effect of securities laws on stock market development in 49 countries. They discuss three distinct theories about the role of securities laws. Under the first one, associated with the work of Coase (1960) and Stigler (1971), a securities law is not needed to address informational asymmetries between buyers and sellers of securities. According to this view, securities issuers have an incentive to reveal all available information about the company because if they fail to do so, investors would assume the worst and not invest. Since there are verification costs associated with ascertaining whether disclosure is complete and accurate, the market creates its own solution in the shape of securities market intermediaries such as auditors, accountants and underwriters, who can vouch for the quality of the securities being offered. They are motivated to act honestly because of reputational reasons and in order to avoid liability. Therefore, market participants' incentives and general contract law would be sufficient to overcome existing informational asymmetries and issuers' incentives to cheat. Under the second and third theories securities laws matter because incentives to cheat are high, and verification and private litigation are costly. The authors distinguish between two schools of thought about how securities laws should be used. They define the *private enforcement* mechanism of securities regulation as one where the

main benefits of a securities law come from reducing the costs of private contracting. Thus, a securities law allows for standard contracting and serves to clarify liability for incomplete or inaccurate information disclosure. In this manner, the law reduces investors' costs of enforcing a securities contract in court. Under the so-called *public enforcement* mechanism private enforcement is insufficient and a public enforcer of securities laws, such as a securities commission (regulator), is needed. Public enforcement is expected to work if the securities regulator is independent and honest, well-funded, empowered to introduce regulations, elicit information, and impose sanctions for violations of securities laws.

La Porta et al. (2003) argue that disclosure requirements and liability rules are crucial features of private enforcement. The authors conduct a survey of one law firm per country, and collect data on various aspects of securities laws. The data are summarized in several key index measures. For example, six proxies of the strength of disclosure requirements are constructed. These are whether a prospectus is delivered to investors ahead of securities issues; whether the company must disclose insiders' compensation; ownership by large shareholders; inside ownership; contracts outside the normal course of business; and transactions with related parties. The index of disclosure requirements is an average of these six proxies. In addition to these specific disclosure requirements, it is common to have a requirement, whereby the prospectus needs to include all material information necessary to assess the value of the securities being offered. However, when bad news hits the company after it has issued securities, the question becomes whether this information was known or knowable to the issuer, distributor and/or accountant, and the burden of proof in this case determines how easy it is for investors to recover damages if information in the prospectus was misleading or omitted. La Porta et al. (2003) distinguish four different liability regimes. Public enforcement is also coded and sub-indices of Supervisor Attributes, Investigative Powers of the Supervisor, Orders and Criminal

Sanctions are constructed. La Porta et al. (2003) combine the sub-indices of Disclosure and Burden of Proof into an aggregate index of private enforcement, and their cross-country econometric analysis finds that the private enforcement index, rather than the public enforcement one, is significantly associated with better securities market performance.

The idea that legal factors help explain stock market development is part of the general law and finance comparative literature. For example, La Porta et al. (1997) examine what determines stock market capitalisation in 49 countries, and find that corporate laws – as encompassed by the legal index of Shareholder Rights – as well as belonging to a given legal origin (family) are statistically significant determinants of stock market development. That paper, however, does not focus on securities laws but only on certain provisions of the corporate (company) laws, which determine minority shareholder protection from managerial and dominant shareholder expropriation.

The relevance of laws for securities market development has also been addressed in the comparative law literature. Black (2001) examines the pre-conditions for successful securities markets from a legal perspective. He draws up lists of legal provisions and institutions necessary to a) resolve problems of asymmetric information in securities issuance, and b) mitigate moral hazard problems after securities have been sold, i.e. that company managers and controlling shareholders have an incentive to cheat investors out of the value of their investment. Among the most important provisions of the law and institutions to reduce informational asymmetries – according to Black (2001) – are good financial disclosure; reliable accounting and audit rules; an effective securities regulator; presence of securities market intermediaries such as accountants, underwriters, auditors; sufficient company and insider liability. To counter expropriation by insiders, legal rules on insider dealing are listed as particularly important alongside most of the provisions just mentioned

for controlling asymmetric information.

Glaeser, Johnson and Shleifer (2001) focus on securities laws and regulations in two transition economies - Poland and the Czech Republic. The authors draw a comparison between the two countries in terms of their securities market regulation in the 1990s. They argue that government regulation of capital markets may be preferable to private enforcement in the presence of a weak judicial system. The authors find that stringent capital market regulations in Poland (as encompassed in its company and securities laws) have stimulated the development of the stock market and led many new firms to go public. In contrast, the lax and poorly enforced capital market regulations in the Czech Republic have brought about stagnation of the stock market, delisting of a lot of privatized companies and practically no new listings. The Czech Republic has also seen rampant expropriation of external investors, which led to the term "tunneling", e.g. Johnson et al. (2000).

The series of La Porta et al. (1997, 1998, 2000) papers on law and finance do not cover the transition economies. The link between legal text, legal enforcement and finance in transition economies is explored by Pistor, Raiser and Gelfer (2000). The authors use coded data for shareholder and creditor rights, based on these jurisdictions' laws on the books from 1992 to 1998.[2] They follow the basic approach of La Porta et al. (1998) in constructing indices of shareholder and creditor rights, but extend the La Porta et al. indices to cover additional aspects of shareholder protection of particular concern to transition countries.[3] The authors also use an

[2]The methodology of the codification of shareholder and creditor rights in the transition economies as well as an extensive analysis of the changes in their corporate laws is provided in Pistor (2000).

[3]For example, they add additional components to the LLSV shareholder index measures of VOICE and EXIT. The former refers to corporate control within the company and comprises all the LLSV shareholder rights measures plus other measures of the ability of shareholders to assert their control over company management. The latter pertains to the rights of shareholders to liquidate their holdings in a company when dissatisfied with the way it is managed. In addition,

index of stock market integrity (SMINTEGR), which does not cover the individual protection of shareholders but rather captures the presence of legal rules on insider dealing, on an independent share registry and stock market supervision. Some of the legal indices which we employ in this paper are similar in content to their stock market index, and later we report the degree of correlation between our measures and SMINTEGR.[4]

To measure legal implementation, Pistor et al. (2000) employ three separate proxies for legal enforcement - the Rule of Law index published by the Central European Economic Review; the EBRD survey-based index of corporate and bankruptcy law effectiveness (which is derived on the basis of the EBRD Legal Indicator Survey, used for all the legal variables in this paper); and an enforcement index based on the World Bank's World Business Environment and Enterprise Performance Survey for 20 transition economies. The econometric analysis of both stock market and banking development reveals that legal enforcement, but not legal text, is statistically significant for explaining stock market and private credit volume. Unlike in La Porta et al. (1997), "the law on the books" in transition is not found to be significantly associated with measures of external finance. Methodologically, the authors conduct OLS and instrumental variable estimations of stock market capitalisation over GDP (averaged over 1997 and 1998), and include the Rule of Law measure (as a proxy for legal effectiveness), and each of the six indices of shareholder protection among the explanatory variables. They also control for method of privatization to account

the authors use ANTIMANAGE and ANTIBLOCK indices to determine how the legal system deals with the conflicts between management and shareholders, and blockholders and minority shareholders. For instance, cumulative voting rights, pre-emptive rights of current shareholders in case of new share issues, quorum requirements for the General Shareholders' Meeting are all examples of indicators, supportive of the rights of minority shareholders when strong blockholders are present.

[4]We also employ lagged SMINTEGR indices as coded by Pistor et al. (2000) as instruments for current securities laws and their enforcement.

for increases in listed firms and capitalisation due to mandatory listing of privatized firms. All estimations of stock market performance reveal that legal effectiveness is significantly associated with larger and more liquid stock markets (market turnover is also used as a dependent variable).

A study by Claessens, Djankov and Klingebiel (2000) focuses on the determinants of stock market development in the transition economies. The authors conduct an OLS regression analysis, and after controlling for income per capita and geographical distance to Western Europe, establish that low levels of inflation, adequate shareholder protection and the size of institutional investor assets are all significant determinants of stock market capitalisation and turnover. Their paper discusses the origins of stock markets in transition countries, and also outlines prospects for future development. Among the study's important features is an emphasis on the role of institutional investors such as insurance companies and pension funds; employing threshold inflation effects in the estimations of the determinants of market capitalisation and turnover; and underscoring the positive relationship between private credit and market capitalisation in the transition economies.

In the present chapter we would like to empirically test how securities laws and their enforcement affect stock market capitalisation and turnover in a sample of 19 transition economies. In so doing, we will test the La Porta et al. (2003) results about the role of securities laws for the sample of economies in transition. The present study differs from Pistor et al. (2000) in the fact that it utilises survey-based legal data, whereas their paper employs measures of legal investor protection, derived from coding the written laws in 24 transition economies. Instead, we are using legal indices of perceived extensiveness and effectiveness of law based on attorney opinions about securities laws in their respective jurisdictions.

The chapter is organised as follows: Section 3.3 presents the data and the main legal indices which we use. Section 3.4 discusses methodological issues, the model

specification and estimation techniques that we employ. Section 3.5 presents the results of the estimations, section 3.6 offers robustness checks, and section 3.7 concludes.

3.3 Data

3.3.1 Securities Markets Laws and Regulations

The legal measures we use to assess equity market development in Eastern Europe and the former Soviet Union are generated through a survey of lawyers (Legal Indicator Survey, or LIS hereinafter) run by the EBRD since 1997 to assess legal reform in transition economies. We have at our disposal the raw survey data for 1999, which covers five main areas of law: company law (corporate governance), bankruptcy law, pledge (secured transactions) law, banking law, securities law. In addition, the survey always had a sixth section devoted to issues of legal enforcement (called General Legal Effectiveness). A hallmark of the LIS is the focus on both the extent of the law, and on how the law is used. The survey questions are divided into two categories: measuring extent or scope of the law (extensiveness questions), and measuring the implementation or use of the law (effectiveness). Questions are weighted according to underlying economic theories about desirable legal norms, or following so-called "best practice" laws. The banking and securities law sections of the survey were added to the main questionnaire in the summer of 1998 during the work on Transition Report 1998. Over the years of implementation of the survey, the EBRD published scores of legal extensiveness and effectiveness, based on the LIS survey scores, but also incorporating expert legal judgments in cases where respondents provided contradictory information. The scores were usually also scaled on a rating scale of 1 to 4, with increments of 1. The baseline scores used were derived as the average of a survey respondent's answer to all questions. A country's legal

score is derived as the average of all responses from attorneys from that country.

A novel feature of the use of the LIS data in this chapter is related to 1) using equal weights for all questions (this differs from the EBRD approach where some questions received higher weights); 2) the legal data have been subjected to an extensive review and cleaning, which has resulted in some differences between the previously published scores and those used in this paper. For instance, coding errors were corrected; internal inconsistencies in question answers were eliminated in a systematic fashion; and missing answers, which had previously been coded as zero values, have now been excluded when aggregating question scores.

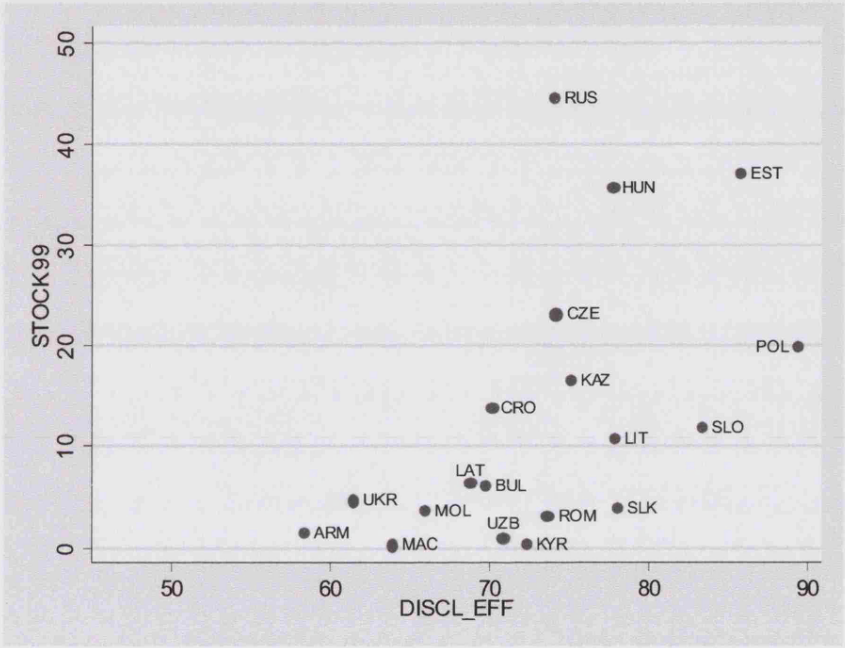
3.3.2 Cross-Country Comparisons

In Chapter 2 we discussed the rationale for securities laws and regulations, and the main features of these laws captured by the securities law section of the Legal Indicator Survey. Let us now turn our attention to a discussion of the four main measures of securities laws. We look at each sub-index overall, and broken down into its extensiveness and effectiveness components.

3.3.2.1 Disclosure Requirements

We first compare the differences in disclosure requirements. The top-ranking countries in the overall measure of disclosure requirements are Estonia, Poland, the Slovak Republic, Slovenia, and Hungary. The lowest-ranking ones are Georgia, Armenia, Ukraine, Kyrgyzstan and Azerbaijan. Surprisingly, Kazakhstan ranks among the top six countries in the stringency of disclosure requirements and the Czech Republic ranks rather low, below the other Central European countries, and with scores similar to those of Albania, Uzbekistan and Belarus. In terms of effective application of disclosure requirements – as shown in Figure 3.1 – the top-ranking countries are Poland, Estonia and Slovenia, whereas the bottom ones are Armenia, Ukraine and

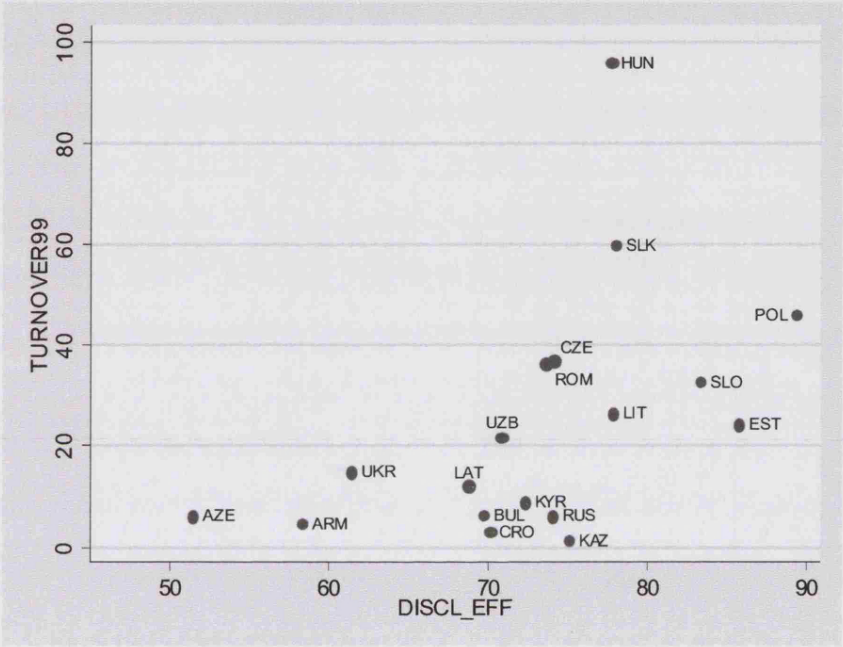
Figure 3.1: Stock Market Capitalisation and Disclosure Requirements Effectiveness Sub-index



FYR Macedonia. We note the relatively high ranking of Kazakhstan and Russia – with effectiveness of disclosure (DISCL_EFF) scores of a similar magnitude to that of the Czech Republic. What explains these rankings?

Our results on differences in securities laws with respect to disclosure requirements for issuers of securities are in line with the findings of Glaeser, Johnson and Shleifer (2001) about differences in securities regulation between Poland and the Czech Republic in the 1990s. They find that issuers and intermediaries in the two countries faced radically different disclosure requirements, and therefore, the two securities market regulators had very different access to information on market participants. The authors compare the Czech and Polish securities laws in terms of regulation of issuers and requirements for financial and ownership disclosure, and establish that Polish securities law imposed much more extensive and stringent re-

Figure 3.2: Stock Market Turnover and Disclosure Requirements Effectiveness Sub-index



quirements for disclosure of issuers' financial and ownership information than Czech law did.[5] In terms of ownership disclosure Glaeser et al. find that the Polish law required public disclosure each time a shareholder exceeded 10, 20, 33, 50, 66 and 75 percent ownership. This is helpful in preventing expropriation of minority shareholders by large shareholders and management. In addition, Polish issuers were required by law to report the owners with more than 10% ownership stake in two national

[5]For example, in Poland the introduction of securities to public trading required both permission by the regulator and the issue of a prospectus. In the Czech Republic the securities law required neither of these features. Both laws prohibited the reporting of false information in a company prospectus. Polish law required the reporting of monthly, quarterly, semi-annual and annual financial statements by issuer; the Czech law mandated only annual reports. Furthermore, Polish law obliged issuers of securities to publish all information material to investors' decision; Czech law mandated only disclosure of significant adverse developments in the company's business.

newspapers; Czech law did not impose such a rule. Finally, mandatory takeover bids are also found to be treated differently in the two countries' laws. Thus, Polish law required any person who has become a holder of shares representing over 50% of the votes at the general meeting to announce an invitation to subscribe for the sale or exchange of the remaining shares. However, Czech law did not impose such a mandatory bid, which is a provision intended to reduce the risk of expropriation of minority shareholders.

These findings on the securities laws of Poland and the Czech Republic are supported by the data on disclosure requirements provided in lawyers' answers to the relevant questions of the Legal Indicator Survey. As mentioned earlier, Poland scores much higher than the Czech Republic in overall disclosure requirements. Indeed, Poland has the second highest score on the stringency of its disclosure requirements after Estonia. On the extensiveness of its Disclosure sub-index Poland also does better than the Czech Republic, but drops several places and ranks below Estonia, the Slovak Republic, Croatia, FYR Macedonia and Hungary. However, from the perspective of effectiveness of disclosure requirements, Poland ranks top among the transition countries, as Figures 3.1 and 3.2 demonstrate. The value of its effectiveness of disclosure index (89.29) is considerably higher than the value of the Czech effectiveness of disclosure index (74.11). Therefore, our results based on the LIS regarding disclosure support the Glaeser et al. (2001) findings about Polish law mandating better disclosure than Czech law. Figure 3.2 shows that while Poland, Estonia and Slovenia score highest in terms of their effectiveness of disclosure legal rules, Hungary, the Slovak Republic and Poland enjoyed the highest turnover ratio in 1999.

Looking in more detail at some of the sources of these differences in favour of Polish disclosure regulation, we find that, generally, the Polish scores on individual questions on Disclosure are higher than the those of the Czech Republic. For exam-

ple, all interviewed Polish respondents agree that publicly traded firms must provide timely and accurate information to investors (mean score is 1.00); not all Czech interviewees so agreed, but the mean is also very high (0.92). However, when asked about how often such disclosure occurs, Polish respondents say that on average it happens "frequently" or "almost always", while on average Czech respondents say it happens only "sometimes". The respective scores are 0.86 and 0.60 for Poland and the Czech Republic. This difference is consistent with the reported differences in the law by Glaeser et al. (2001) that Polish law requires disclosure of all material information, while Czech law requires disclosure of significant adverse developments only. Comparing the two from the perspective of reliability of the disclosed information, we find a significant difference in the mandatory use of international accounting standards (IAS). The Polish score is 0.57, the respective Czech one is 0.07. Almost none of the Czech lawyers thought that financial statements by issuers need to comply with IAS. In terms of transparency of deals, Poland also appears to be better: all Polish survey respondents confirm that a clearance and settlement system for both shares and bonds is in operation (mean score of 1.00), whereas not all Czech respondents say so about their country's clearance and settlement system (mean score of 0.77). The survey gathers information which could be compared with the information provided by Glaeser et al. (2001) on requirements for a prospectus and regulatory permission to issue securities. They found that, while Polish law mandated both a prospectus and getting regulatory approval, Czech law did not mandate either. However, when asked whether issuers must file information with the Regulator prior to a securities issue, almost all Czech and Polish respondents say that this is indeed the case, and that the information provided should be more than that contained in the company's annual report.[6] Therefore, the overall LIS

[6]The Czech mean scores here are somewhat higher than those of Poland (0.25 and 0.19 for mandatory filing, and 0.25 and 0.21 for more extensive information being filed). Both these scores have a maximum of 0.25. Also, most Polish and Czech respondents consider a prospectus manda-

ranking of disclosure requirements, whereby Poland scores consistently higher than the Czech Republic, captures the essence of the Glaeser et al. (2001) finding that Polish law imposed much stricter disclosure rules than Czech law. We summarise the individual scores on disclosure in the Appendix 3.A tables.

3.3.2.2 Regulator Attributes

One of the main findings of Glaeser et al. (2001) is that the establishment of an independent Securities Commission benefited the development of the Polish securities market; the lack of an independent commission in the Czech Republic, who chose to supervise the securities market through the Capital Markets Supervisors Office in the Ministry of Finance – a body allegedly unconcerned with the regulation of the market according to Glaeser et al. (2001) – brought about stagnation in the Czech securities market. How are these conclusions borne out by the Legal Indicator Survey data on regulator attributes? Unfortunately, the survey information does not allow for a very detailed analysis of the pertinent Regulator characteristics, and does not specify all the detail provided by Glaeser et al. (2001). Nevertheless, some useful findings emerge. For example, while the Polish and Czech answers do not differ much from the perspective of whether a Regulator exists, and what its functional responsibilities are, the Polish Regulator is thought to have, on average, better trained and more knowledgable staff, than the Czech Regulator does (mean score of 0.50 for Poland versus a means score of 0.42 for the Czech Republic). The differences in terms of existence of a Regulator and its focus are marginal.

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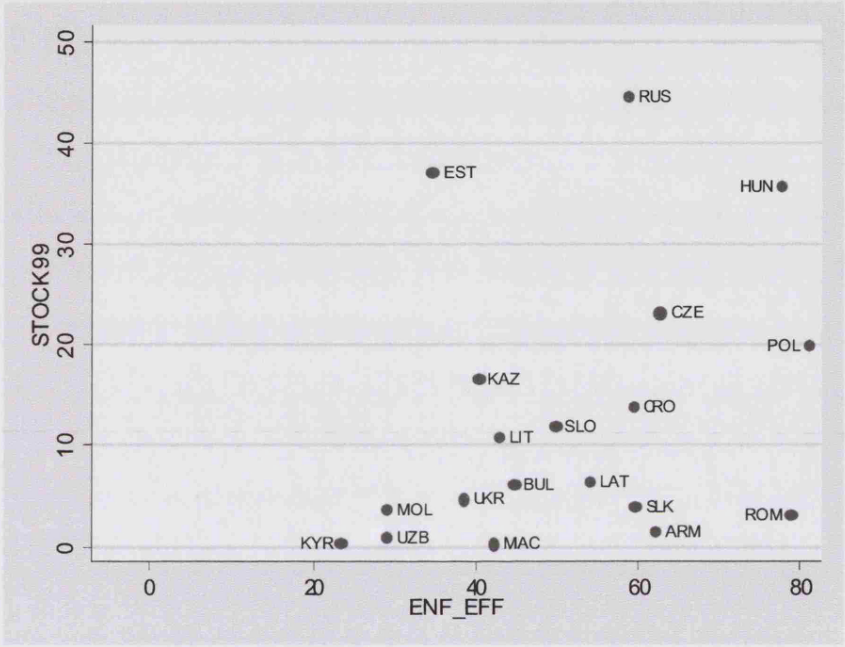
tory, but not financial statements. The mean scores here are marginally in favor of the Czech Republic too. This is somewhat surprising given the Glaeser et al. finding that the Czech law does not require a prospectus while Polish law does. Moreover, when asked about the frequency with which the Regulator reviews and approves the information provided by a company before a public securities issue, Czech respondents also indicate a marginally higher frequency on average (mean score of 0.85 against 0.82 for Poland).

Overall, we do not find much of a difference in the Regulator Attributes sub-index (mean of 97.14 for Poland and 95.76 for the Czech Republic, with the Czech Republic having a slightly higher ranking on its extensiveness component (mean of 98.86 against 96.43), but Poland doing considerably better (indeed, a t-test for differences in means indicates significance at the 10% level) in terms of the effectiveness component (mean of 100.00 for Poland against a mean of 83.33 for the Czech Republic). While these results do not give a full picture of other potentially interesting regulator features, such as how its staff are appointed or dismissed, and probably the survey questions are not well suited to give even a good notion of Regulator independence, we still find that the Polish Regulator is reported to have better human resources, which is captured by the effectiveness score. This shows a good parallel with the Glaeser et al. (2001) results.

3.3.2.3 Enforcement Powers of Regulator

Much like Glaeser et al. (2001), we do not find many differences in the enforcement powers of the securities regulator in Poland and the Czech Republic. Glaeser et al. establish that in both countries the Regulator was entitled to issue and revoke licenses, to generate regulations and to impose fines for violations of securities laws and regulations, but had to refer criminal cases to the public prosecutor. Similarly, when asked whether the Regulator has enforcement powers, all respondents in Poland and the Czech Republic agree that this is the case. However, when asked what these powers include, all Polish respondents indicate both ability to revoke an issuer's listing and ability to impose civil fines or penalties (scores of 0.15 and 0.35 respectively), while only half of Czech respondents think that the Czech regulator has the authority to revoke a license (mean score of 0.08), and about 77% think that the Czech regulator is authorised to impose civil fines and sanctions on violators. A more pronounced difference relates to the use of oversight and enforcement powers

Figure 3.3: Stock Market Capitalisation and Effective Enforcement Powers of the Securities Regulator

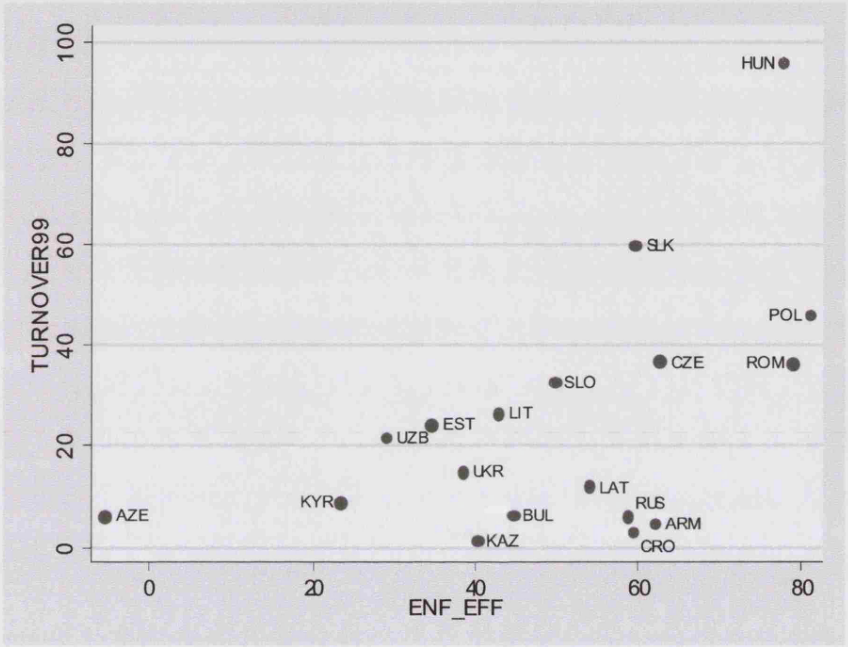


by the Regulator. Polish respondents tend to answer that their Regulator has always used his enforcement powers in the preceding five years (mean score of 100.00); Czech respondents agree that their Regulator has used its enforcement powers to a lesser degree (mean score of 0.88).

On insider trading rules, all the interviewed Polish and Czech lawyers report that insider trading is prohibited. Czech respondents suggest that, on average, such a prohibition is supported by a wider array of laws and administrative rules than Polish respondents do (the mean score of the comprehensiveness of prohibition is 0.46 for the Czech Republic and 0.34 for Poland).[7] However, when asked next

[7]For example, six of the seven interviewed Polish respondents agree that insider trading is prohibited through a legislative act; a further four of these agree that it is also prohibited by criminal law. Only one respondent indicates prohibition by legislative act, criminal law, administrative

Figure 3.4: Stock Market Turnover and Effective Enforcement Powers of the Securities Regulator



about the frequency with which the Regulator engages in cases of insider trading, Polish regulators are reported to have been more actively pursuing insider dealing violations (mean score of 0.63 versus a mean score of 0.38 for the Czech Republic).

Figure 3.3 presents the effectiveness index of enforcement powers (ENF_EFF), and suggests that such powers are highest in Poland, Hungary and Romania. It also shows that Estonia is an outlier – with one of the lowest scores on the effectiveness of enforcement powers index, but with one of the highest market capitalisations relative to GDP. Figure 3.4 shows the stock market turnover ratio against the effectiveness

rules and regulations, and stock exchange rules. Twelve out of the thirteen Czech respondents indicate prohibition by a legislative act; eight confirm that prohibition by criminal law exists; four say insider trading is also prohibited by stock exchange rules, and also four respondents say that insider trading is prohibited by private law.

of enforcement powers index (ENF_EFF). It displays a better fit than capitalisation, and the fit is further improved after we exclude Moldova and FYR Macedonia from the scatter diagram (both are outliers in terms of turnover due to their small market size and a few large dominant transactions in the market, and are not shown in Figure 3.4).

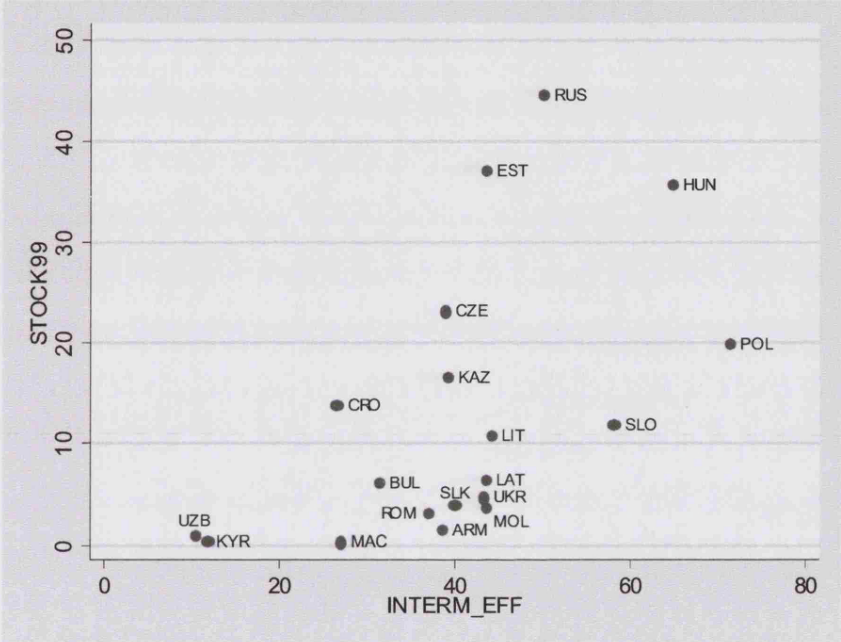
Overall, the Legal Indicator Survey results on the enforcement powers of the Regulator corroborate the conclusions reached by Glaeser et al. (2001). Indeed, we do find that the Polish Securities Commission was much more actively involved with the supervision of market participants and finding violations of the securities law.

3.3.2.4 Regulation of Securities Intermediaries

A cross-country comparison in the Regulation of Intermediaries sub-index, reveals that Poland and Hungary are the two countries with the most stringent regulation of securities market intermediaries, followed by Slovenia, Russia, the Slovak Republic and the Czech Republic. The lowest-ranking countries are Kyrgyzstan, Azerbaijan, Albania, Georgia and Uzbekistan. In terms of effective regulation of market intermediaries only, Poland, Hungary, Slovenia and Russia rank top, and as shown in Figure 3.5, Uzbekistan and Kyrgyzstan rank bottom. The figure points to a generally positive relationship between the effectiveness index of regulation of market intermediaries (INTERM_EFF), and stock market capitalisation as percent of GDP (STOCK99). Figure 3.6 shows the turnover ratio against the index of effective regulation of securities market intermediaries. The relationship between the two is generally positive. Hungary, the Slovak Republic and Poland have the highest turnover ratios.

How do the rankings for the Poland and the Czech Republic compare? Glaeser et al. (2001) argue that some of the key differences in the two countries' securities laws relate to their provisions regarding regulation of market intermediaries such

Figure 3.5: Stock Market Capitalisation and Effectiveness of Regulation of Securities Market Intermediaries

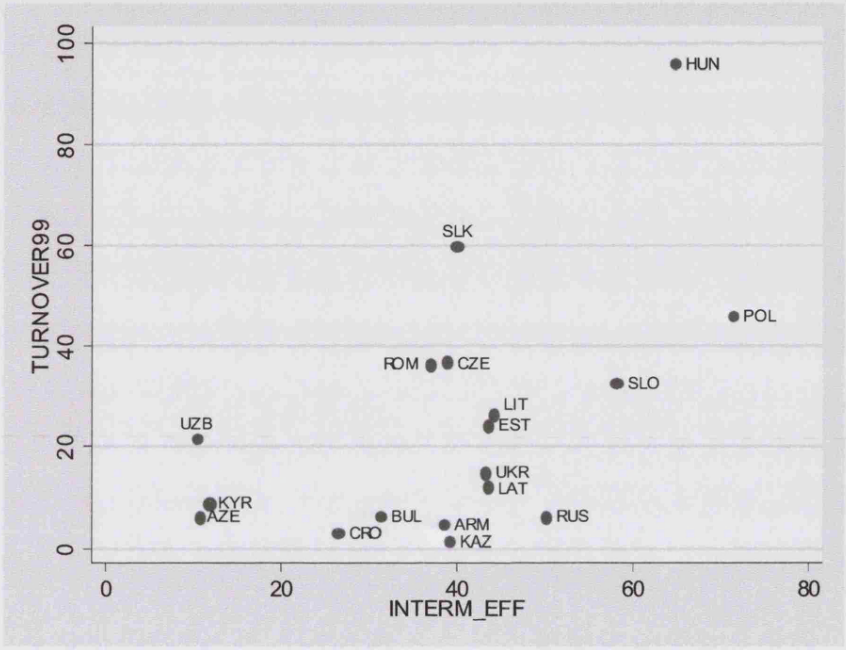


as brokers, brokerage firms, investment advisors, investment funds, and custodian banks.[8]

In line with their earlier findings, Glaeser et al. (2001) report that in Poland individual brokers and brokerage firms faced considerably stiffer licensing requirements and regulations than their Czech counterparts. More specifically, the Polish

[8]The argument for regulation of intermediaries goes back to Landis (1938), who argued that the United States Securities and Exchange Commission (SEC) could not monitor the compliance with disclosure, reporting and other rules by all publicly listed companies and the trading practices of all market participants. Instead, he argued that the SEC should regulate market intermediaries such as investment advisors, brokers, etc., placing on them the burden of ensuring compliance by market issuers and traders. It would be in their reputational interest to ensure good compliance by other market participants. With intermediaries being relatively few in number, the SEC could monitor and regulate them more easily.

Figure 3.6: Stock Market Turnover and Effectiveness of Regulation of Securities Market Intermediaries



law instituted elaborate licensing requirements for individual brokers accompanied by tests. The Czech exams and requirements appeared much easier and pro-forma.[9] Polish law also established strict requirements for the conduct of investment advisors such as subjecting them to mandatory licensing by the Regulator, requiring them to pass an exam administered by the Regulator, and subjecting them to inspections by the Regulator as well as to disclosure of ownership information. Czech law contained no specific provisions on the regulation of investment advisors. Finally, Polish securities law was more restrictive in terms of regulation of investment (mutual) funds

[9]Czech law, for instance, did not require brokers to engage in "honest trading" and act in the interest of clients, whereas the Polish law did. Polish law imposed considerable requirements on brokerage companies, such as an obligation to report who has more than 5 percent of voting rights; to report changes in voting rights above 2 percent; and to allow the securities regulator access and inspection rights. Czech law required none of these.

and custodian banks.

We can test some of these findings since the Legal Indicator Survey contains a reasonably extensive subset of questions pertaining to regulation of intermediaries. Indeed, we find that in aggregate terms, Poland does considerably better in its Regulation of Intermediaries sub-index than the Czech Republic (mean score of 82.10 for Poland against a mean score of 62.42 for the Czech Republic). Looking for the sources of this difference, we find that first, both countries report that the securities law regulates the conduct of market intermediaries such as brokers and dealers, that brokers and dealers are subject to mandatory licensing and that they must have certain professional qualification. Most likely, the question was interpreted by respondents as referring to individual brokers. However, when asked about the intensity of regulation as measured by the frequency with which brokers have has their licenses revoked in case of violations of the law, Polish respondents indicate a considerably higher frequency of intervention than the Czech respondents (0.63 versus 0.44). A large difference arises in answers to the question whether self-regulatory organizations exist. Poland scores better than the Czech Republic (0.64 versus 0.36). In line with the information in Glaeser et al. (2001) that investment (mutual) funds must be licensed by the Securities Regulator, all Polish and Czech respondents indicate that there are separate rules and regulations for the licensing and regulation of investment funds. A source of a difference, however, is whether issuers of investment funds are subject to disclosure requirements, and how effective such disclosure is. The paper by Glaeser et al. does not provide information on this aspect, but the finding that Polish law establishes stricter disclosure on investment funds (mean score of 1.00 compared to 0.83 for the Czech Republic), and that Polish investment funds are expected to provide such information more regularly than their Czech counterparts (mean score of 0.79 versus 0.60), is consistent with the general finding about Polish law requiring stricter disclosure from market participants.

Another source of difference arises from whether, or not, an investor compensation scheme exists to compensate investors for their losses in case of the failure of a market intermediary. While almost all Polish survey respondents agree that such a system is in operation, Czech respondents point to its absence (a mean score of 1.00 for Poland against 0.08 for the Czech Republic). As is obvious from the Appendix 3.A tables, this is one of the largest differences in individual question scores between the two countries. Czech respondents indicate a higher incidence of failures of securities market intermediaries, but report that investors are somewhat less likely to receive compensation for their losses (a mean score on frequency of compensation of 0.21 for the Czech Republic against 0.38 for Poland).

In conclusion, the Glaeser et al. (2001) results about Polish law regulating securities market intermediaries much more comprehensively and stringently than the Czech law is supported by our breakdown of the relevant questions on Regulation of Intermediaries. The main differences are due to a higher intensity of regulation of brokers and dealers; the presence of self-regulatory organizations with oversight responsibilities over market participants; more extensive and effective disclosure requirements for investment funds; and the existence of an investor compensation scheme. Thus, this detailed review of individual differences in question scores between two of our sample countries shows that the LIS 1999 data are in line – at least for Poland and the Czech Republic – with other related empirical research. This supports the validity of the LIS data, despite its drawbacks which were discussed in Chapter 2.

Having conducted an extensive comparison of our disaggregated index ranking with the findings of Glaeser et al. (2001) for Poland and the Czech Republic, we next compare our securities law extensiveness and effectiveness indices with the Pistor et al. (2000) index of stock market integrity (SMINTEGR). Table 3.1 shows the correlation coefficients between the values of the SMINTEGR index for 1998,

Table 3.1: Stock Market Integrity Index and Sub-indices of Securities Regulation, LIS 1999: Correlation Coefficients

	SMINTEGR98	SMINTEGR96	SMINTEGR94	SMINTEGR92
DISCL	0.3576*	0.3739*	0.4249*	0.1684
DISCL_EXT	0.2862	0.2413	0.2300	-0.0451
DISCL_EFF	0.3081	0.3940*	0.5025*	0.3682*
INTERM	0.3790*	0.3792*	0.8373*	0.5650*
INTERM_EXT	0.2825	0.3283	0.6496*	0.3884*
INTERM_EFF	0.3631*	0.3336	0.7856*	0.5627*
ENF	0.1693	0.1928	0.4316*	0.3750*
ENF_EXT	0.0791	0.0790	0.2725	0.2569
ENF_EFF	0.3294	0.3628*	0.5623*	0.4579*
REGATTR	0.2519	0.0472	-0.0331	0.4324*
REGATTR_EXT	0.2198	0.0139	-0.0739	0.3599*
REGATTR_EFF	0.1562	0.0723	0.0507	0.2960
CAP99	0.3896*	0.3793*	0.7265*	0.5380*
EXTCAP99	0.3514	0.3215	0.5719*	0.3913*
EFFCAP99	0.3724*	0.3768*	0.7519*	0.5789*

Source: Pistor et al. (2000), and author's compilations. Note: Asterisks indicate that the coefficient is statistically significant at the 10% level at a minimum.

1996, 1994 and 1992 (as coded by the authors), and our LIS-based indices of securities law extensiveness and effectiveness. From the outset, we would expect some positive correlation with some of our four main sub-indices, i.e. disclosure, regulation of intermediaries, enforcement powers and regulator's attributes. However, we would expect correlation to be fairly limited since the scope of information coded in SMINTEGR differs considerably from the content of the securities law questions in the LIS. For example, SMINTEGR is coded on a 0 to 6 scale, with six components. Three of these relate to securities regulation directly. One point is given to the presence of a state agency for capital market supervision, and another point is scored for independent capital market supervision. These two elements can be compared with the information gathered by LIS on Regulator's Attributes (Q2). Another point is added to the SMINTEGR index, if insider trading is prohibited by law. This part is then comparable to our sub-index of Enforcement Powers of the Regulator (namely, Q13 and Q14). Therefore, we would expect some presence of correlation. However, the SMINTEGR index also contains provisions, which are not related to securities laws *per se*, such as mandatory takeover bids; the shareholder register being maintained by an independent firm; rules against self-dealing; mandatory disclosure triggers for acquisitions of large blocks of shares. Therefore, the Pistor measure contains some provisions from general company law, which are supportive of the functioning of the stock market. In contrast, our securities measures do not cover all these aspects, but go into much further detail about disclosure, intermediary regulation, attributes and powers of the Regulator. They allow us to conduct the detailed comparisons with other studies, as done above. In contrast, Pistor et al. (2000) note that their coding of stock market integrity (SMINTEGR) does not allow them to pick up very clearly the differences in Czech and Polish securities laws as debated by Glaeser et al. (2001). Altogether, we find some positive correlation between SMINTEGR scores for 1998 and earlier years, and our sub-indices for 1999.

Surprisingly, we find more instances of significant positive correlation between our legal sub-indices and SMINTEGR in the earlier years (1992 and 1994). In addition, the effectiveness sub-indices show a stronger positive correlation than the extensiveness ones. This correlation allows us to use these lagged SMINTEGR indices as instruments for our legal indices of securities regulation in 1999.

3.4 Methodology

We are interested in examining the relationship between stock market development and regulation of securities markets as captured by the answers of legal experts to the LIS. We have outlined above the main sub-indices, based on the survey, and why they are important for securities markets. We are particularly interested in testing which types of securities regulations, if any, affect market development.

Our testing procedure relies on a standard regression methodology despite the serious limitations of the sample size (19 observations), which restricts the degrees of freedom with which we operate and make inferences. Nevertheless, we prefer the econometric approach for a number of reasons. First, simple "eye-balling" of the association between capital market development and securities regulation reveals that some of the regulatory sub-indices exhibit a positive relationship with market capitalisation and turnover (see Figures 3.1 to 3.6). However, examining these scatterplots is not sufficient to tell us whether this relationship is robust to other factors, or what the causality and degree of association are. Moreover, we would like to be able to compare our results with earlier findings in the related literature, e.g. Pistor et al. (2000), and in order to do so with a reasonable degree of confidence, an approach similar to the one used in earlier studies, i.e. one based on econometric techniques, must be followed.

Notwithstanding this decision, we also discuss and present our data in graphic form in order to identify potential outliers and visually illustrate the association

between the variables of interest.

Below we address the choice of dependent and explanatory variables to be used, and some of the problems which we encounter when conducting the regression method chosen.

3.4.1 Choice of Variables and Regression Specification

We are interested in examining the effect of the extent and effective use of securities laws and regulations on stock market development. We use two main proxies for the level of stock market development. One is the ratio of stock market capitalisation to GDP in 1999. The second variable is stock market turnover, i.e. the ratio of the value of stocks traded and market capitalisation. Capitalisation and turnover measure different aspects of stock market development. Market capitalisation is the product of number of listed stocks and the price of the stocks. It is scaled by GDP to control for economy size. Therefore, high capitalisation may reflect either a high number of listed companies, or a high valuation of listed companies, or both. Capitalisation is thus a measure of the size of the stock market. More importantly, recent theoretical models, e.g. Shleifer and Wolfenzon (2002), establish that better investor protection is associated with both a higher number of listed domestic firms, and with higher valuations of listed shares. Since capitalisation reflects both, it is a suitable proxy for stock market development.

Market turnover is a measure of stock market liquidity. It is equal to the value of stocks traded divided by stock market capitalisation. Thus, it measures the extent to which stocks are traded relative to the size of the stock market. For example, a market with high capitalisation is not necessarily a liquid one. Stocks may be dormant or not actively traded, which would lead to low turnover despite high capitalisation. Another market liquidity measure is the value of stocks traded as percent of GDP. This measures stock market liquidity relative to the size of the

economy. The two measures of market liquidity are different: turnover will be high in a small and liquid stock market, but value traded as percent of GDP will be low.

Measuring stock market development in transition economies is not a straightforward exercise. Stock market capitalisation – which is commonly used in the literature – suffers from some drawbacks, mainly due to the mandatory listing requirements after privatization. High market capitalisation to GDP may thus reflect not a large equity market or firms raising finance through the stock exchange, but rather a high number of listed shares, which are never traded. Glaeser et al. (2001) also consider several measures of stock market development, and note that in 1998 the Czech market had a still larger capitalisation relative to GDP than the Polish market (at 24.2% versus 14.1% in Poland).[10]

Furthermore, the 1999 market capitalisation data, which we utilise, are also higher for the Czech Republic than Poland although the difference between the two – compared to 1998 – is diminishing – 23.1% in the Czech Republic compared to 20% in Poland. This suggests that stock market capitalisation is, perhaps, not the most appropriate measure of securities market development in transition economies. An alternative measure that we employ, which is arguably more appealing than the market capitalisation measure, is market liquidity, as measured by the turnover ratio. The latter measure should overcome the problem of having a mass of dormant

[10]This was in spite of the Czech market displaying a declining trend in capitalisation over time, delistings on its free market segment, and no IPOs issued for cash – either by private companies, or as part of privatization – between 1991 and 1998. At the same time, Poland saw an upward trend in its equity market capitalisation and listed firms figures, as well as 50 privatizing firms selling equity for cash as part of initial privatization, and 136 private firms going public during the period of 1991-1998. The corresponding figures for the Czech market were zero. Glaeser et al. (2001) also note that the Polish market was outperforming the Czech one on another measure – the IFC Investable Index – which is compiled by the International Finance Corporation, and measures stocks which are liquid enough for foreign investors to buy. The Polish index comprised more stocks than the Czech one, and displayed a higher value than the Czech one in 1998.

shares due to mandatory privatization-related listings since it measures the volume of shares traded (number times price) as percentage of market capitalisation (total number of listed shares times price at last transaction). Having a large amount of dormant shares would result in a low turnover ratio.

Market turnover also has some shortcomings – some of the transition stock markets are very small and had only a few listed stocks in 1999 (such as FYR Macedonia with 2 listed firms). One or few large transactions – usually related to privatization listings – can result in large turnover ratios in any given year. The turnover ratio would be high although trading in most listed stocks is low, firms do not find it attractive to list on the stock exchange and the stock market has less relevance for the external financing needs of private firms than other sources of finance. We overcome these problems by dropping extreme outliers from the regression analysis.

Among the other variables which proxy stock market development and which are used in the related literature, are the value of initial public offerings (IPOs) relative to the country's GDP; the number of domestic publicly-traded firms scaled by population; subjective assessments about the ease of raising equity finance on a given stock market measured by cross-country surveys of investors, etc. We have at our disposal limited information about the number of listed firms and value of IPO activity in our sample countries. The data have missing observations for a number of countries, which reduces the sample size considerably and does not allows us to conduct meaningful econometric estimations.

Therefore, we employ both stock market capitalisation and market turnover as the main dependent variables in our regression estimations. Acknowledging that both suffer from some shortcomings, we take the results of the next sections as merely suggestive. Furthermore, in the capitalisation regressions we control for mandatory privatization-related stock listings, which should somewhat mitigate the problems associated with the capitalisation variable.

In order to isolate the effect of legal development on financial development, we control for a number of variables identified as significant predictors of financial development in previous research. Thus, both Djankov et al. (2000) and Pistor et al. (2000) introduce in stock market capitalisation regressions a control variable for mandatory privatization-related listings on the stock market.[11] In a similar fashion, to control for forced listings due to privatization, we include a dummy variable for all countries where mass voucher privatization was the primary method of privatization, using information from the EBRD Transition Reports.

A second control variable is the level of economic development as measured by the logarithm of GDP per capita. The law and finance literature recognises the need for isolating the effect of general economic development from the effect of legal factors on financial outcomes. Economic development is generally associated with more developed and deeper capital markets. Moreover, richer countries may have generally better laws and institutions for law enforcement. Therefore, some scholars argue that legal development may only affect financial development through its carrying a "general development effect", i.e. legal development may only affect financial development insofar as it picks up this general economic development effect. Therefore, we need to isolate the effect of the laws beyond the effect of economic development. We address how this will be done in the following sub-sections.

Macroeconomic stability is also an important factor for financial market development. High inflation reduces expected returns and the willingness of investors

[11] For example, several transition countries which had mass voucher privatization programs, such as the Czech and Slovak Republics, Lithuania and Romania, forced privatized firms to list on the stock exchange, and the transfer of ownership passed through the stock exchange. This is in contrast to other countries where there was no mass privatization and stock markets were established with relatively few IPOs, and to a third group of countries which fall somewhere in between – i.e. where there was mass privatization, but initial exchanges of shares took place off the stock exchange, and there were no mandatory listings for all privatized firms as in the first group of countries.

to buy shares. Theoretical literature shows that inflation interferes with the ability of financial markets to allocate resources efficiently. Recent empirical research, e.g. Boyd, Levine and Smith (2001), suggests that there is a significant negative relationship between stock market activity and inflation. In addition, the authors find evidence of thresholds – economies with inflation rates exceeding 15% per annum exhibit a discrete drop in financial sector performance. In recognition of these findings and since many transition countries have or did have high inflation, we include a measure of average inflation over the preceding 5 years and including 1999 in our regressions.[12]

Financial development is also shown to be affected by general institutional development such as legal origin, or the prevailing system of law and order in a country. Since the transition economies all underwent an extended period of time under communism, time spent under communism may serve as a good proxy for historical memory of markets. The idea that historical memory of markets and institutions matters, has been put forward in a number of empirical studies of transition economies, e.g. Pistor (2000). Shared historical past with Western European countries and experience with laws and market institutions, such as banks and stock markets, prior to the onset of communism in some of these countries might be reflected in the present degree of banking and stock market development and regulation. In other words, we may expect that historical memory would play a role in the effective application of financial laws and functioning of capital markets. The number of years under communism could serve as a useful proxy for the memory of market institutions. In this respect the transition economies could be divided into three main groups: those, which spent a low number of years under communism (40-45 years), those with a high number of years under communism (70-75), and the medium-range countries (51-52 years). Among the first group are most of the Central and Eastern European

[12]The years are chosen so as to reflect the timing of stock market development (which started in many places in the mid-1990s), and to also smooth out inflation fluctuations over the period.

countries; the three Baltic countries and Moldova fall into the intermediate range, and all the other former Soviet republics are at the high end of the scale. We have conducted a simple analysis of differences in means of securities law effectiveness for these three groups of countries, shown in Table 3.2. The results indicate statistically significant differences in mean effectiveness of securities laws (for all 5 indices) between the countries with high and low number of years under communism, and for three of the five indices when comparing the group of countries with high and medium number of years under communism.

As witnessed by the literature on law and finance, the causal effect of legal development on financial development cannot be established with certainty, and it is crucial to find suitable instruments for legal development. We address this issue in the next section in more detail. We test several instrumental variable sets such as legal origin (LEGAL ORIGIN) as defined in Pistor (2000); legal transplant status (TRANSPLANT_ST), as defined by Berkowitz et al. (2003) and Pistor et al. (2000); lagged values of the stock market integrity index (SMINTEGR) by Pistor et al. (2000); the number of years under communism (YRCOMM); and the main religion practised by the largest fraction of each country's population (RELIGION)[13].

In summary, our basic regression specification is as follows:

$$STOCKDEV99_i = a + b * LEGEXT99_i + c * LEGEFF99_i + d * Controls_i + u$$

$STOCKDEV99$ is the measure of stock market development, a is a constant term, $LEGEXT99$ and $LEGEFF99$ are the respective extensiveness and effectiveness components of securities laws, and the set of control variables include GDP per capita, average inflation, and a voucher privatization dummy; the subscript i refers to country i.[14]

[13]For example, Stulz and Williamson (2003) find that cultural proxies, such as religion and language, help explain both creditor rights across a sample of 49 countries, as well as legal enforcement of shareholder and creditor rights.

[14]An earlier version of this paper included the GDP growth rate among the explanatory variables.

Table 3.2: Years under Communism and Securities Law Effectiveness: Average Scores for Each Country Group

Years under communism	DISCL_EFF (mean)	INTERM_EFF (mean)	REGATTR_EFF (mean)	ENF_EFF (mean)	EFFCAP99 (mean)
70-75	64.89	26.75	71.20	36.44	41.67
50-55	74.55	43.71	81.85	40.31	53.23
40-45	73.95	40.46	89.72	58.07	55.03
T-test 70-75 / 50-55	-1.66* (0.0696)	-3.20*** (0.0063)	-0.75 (0.2356)	-0.39 (0.3506)	-2.67** (0.0115)
T-test 70-75 / 40-45	-1.96** (0.0340)	-1.71* (0.0527)	-1.45* (0.0904)	-2.14** (0.0237)	-2.18** (0.0220)
T-test 50-55 / 40-45	0.11 (0.4563)	0.54 (0.3014)	-0.98 (0.1874)	-2.22** (0.0258)	-0.36 (0.3615)

Note: The table reports average scores for each category as well as the probabilities of rejecting the null hypothesis of equal means. One-tailed t-tests are reported. P-values are shown in parentheses next to t-statistics.

Finally, we must stress that the pure cross-sectional regression model, which we are going to estimate has some distinct shortcomings. These are the inability of cross-sectional regressions to take into account time dimensions of data; potential omitted variable bias due to country-specific effects, which cannot be captured by the model; and potential simultaneity bias. In addition, cross-sectional regression models face common problems such as multi-collinearity. We address these drawbacks in the next sub-sections, and explain possible ways to overcome them.

3.4.2 Endogeneity Problems

Endogeneity problems are quite common in a multiple regression model of the type we specify here, i.e. looking at contemporaneous measures of financial development and legal development. The presence of an endogenous explanatory variable in a multiple regression model could be due to an omitted variable, to measurement error or to simultaneity. Each of these may cause the endogenous variable to be correlated with the error term of the regression, which violates the standard assumption of the OLS estimator of a zero conditional mean, and produces biased and inconsistent OLS estimates. In such cases, measures need to be taken to ensure that the parameter estimates are unbiased and consistent. One way to correct for endogenous explanatory variables in cross-sectional multiple regression models is to employ instrumental variables (IV) estimation. The IV estimator relies on identifying a new variable, z, such that it is correlated with the endogenous variable, but is not correlated with the regression error term u, i.e. is exogenous to the regression specification.

To confront problems of endogeneity in our regressions due to simultaneity or

Since many studies on the finance-growth links have established that financial development predicts economic growth, i.e. causality runs from finance to growth, it is questionable whether growth belongs in the type of model we are estimating. We have conducted robustness checks, controlling for average GDP growth from 1995 through 1998, and find that our results do not change.

omitted variable bias, we have chosen to employ instrumental variable techniques in addition to, and as a robustness check to our OLS results in a cross-country regression framework. As we mentioned above, there are two conditions which must be met for a variable to be a suitable instrument for securities regulation extensiveness and effectiveness in our stock market development regressions. First, we need to find a variable exogenous to securities development over the sample period. Second, it has to be correlated with our legal and regulatory measures.

One possible candidate for an instrument for our legal (regulatory) scores would be lagged values of the same. However, we do not have at our disposal the securities law variables before 1998. We only have measures of commercial law (i.e. company, bankruptcy, pledge and general effectiveness) effectiveness and extensiveness for 1997, when the commercial law part of the LIS was conducted for the first time. However, we do have measures of stock market regulation (SMINTEGR) for earlier years, as coded by Pistor et al. (2000). This index is available for 1992, 1994, 1996 and 1998, and we have already tested that it is reasonably correlated with our legal measures of securities regulation extensiveness and effectiveness, particularly for the early years (see Table 3.1). Since the laws governing stock markets in 1992, for example, could not have been affected by stock market developments in 1999, we assume that the lagged indices are exogenous to our regression model.

We also utilise legal origin dummies even though the transition economies are usually classified as having Socialist legal origin, and no distinction is made among them as belonging to the major legal traditions of the world.[15] Table 3.3 presents

[15]To the extent that some transition countries adopted different West European legal codes, such as civil, commercial and criminal codifications, at the end of the 19th and the beginning of the 20th centuries, a classification is sometimes attempted, linking them to the origin country from which major codes were copied. For example, Central European countries such as the Czech Republic and Hungary are often classified as German legal origin countries. Others, such as Poland, initially borrowed more extensively from French and Italian legal codes, but later the German influence was

t-tests for differences in mean effectiveness securities law indices across the three types of legal origin countries in our sample. We observe significant differences in all five of our indices between the German and Socialist legal origin countries. Also, in three of the five indices, the German legal origin countries score significantly higher than the French legal origin ones.

Table 3.3: Legal Origin and Securities Law Effectiveness: Average Scores for Each Country Group

Legal origin	DISCL_EFF (mean)	INTERM_EFF (mean)	REGATTR_EFF (mean)	ENF_EFF (mean)	EFFCAP99 (mean)
German	78.32	47.86	90.70	58.16	59.99
French	66.72	26.27	83.34	37.86	43.72
Socialist	65.00	28.43	71.58	39.36	42.35
T-test	3.03**	2.88**	0.93	1.4475	2.42**
German/French	(0.0104)	(0.0117)	(0.1972)	(0.1026)	(0.0296)
T-test	3.32***	2.83***	1.64*	2.1429**	3.56***
German/Socialist	(0.0022)	(0.0058)	(0.0643)	(0.0241)	(0.0012)
T-test	0.38	-0.28	0.90	-0.10	0.20
French/Socialist	(0.3558)	(0.6068)	(0.1926)	(0.5383)	(0.4244)

Note: The table reports average scores for each category as well as the probabilities of rejecting the null hypothesis of equal means. One-tailed t-tests are reported. P-values are shown in parentheses next to t-statistics.

stronger. In addition, some countries developed their pre-war basic laws by mixing from different Western sources, such as borrowing from German sources for their pre-war commercial codes, but from French sources for their civil codes (e.g. Bulgaria). Following Pistor (2000), we distinguish three legal origins: German, French and Socialist among the sample of transition economies. For more on this classification see Chapter 4.

Another potential instrument for our legal scores would be the so-called legal transplant status, i.e. how a country adopted its system of fundamental laws.[16] However, as we shall see later on, transplant status is generally a weak instrument for most of our legal indices.

Therefore, we choose to estimate our basic regression model above with OLS, and then with two-stage least squares using the various instrument sets just described. We implement two diagnostic tests for the IV regressions. First, we test whether endogeneity is indeed present. We perform the Hausman test, which compares the coefficient estimates of the OLS and IV regressions and indicates whether OLS is inconsistent, assuming that the IV estimator is consistent. If we can reject the null hypothesis of no systematic difference between the OLS and IV estimates, this means that OLS is inconsistent and endogeneity may well be present. Another way to test for endogeneity is done by regressing the endogenous variable on all exogenous variables included in the structural model (including the instruments), and using the estimated residual in an OLS regression of the "structural" equation (including the endogenous and exogenous variables). If the residual is found statistically significant, we can conclude that endogeneity is present. This procedure is given by Davidson and MacKinnon (1993).

[16]Berkowitz, Pistor and Richard (2003) analyse transplantation of legal codes from "origin" countries to "transplant" countries. Jurisdictions of 49 countries are categorized as either being origins, i.e. where legal codes and orders developed internally, or transplants, i.e. where laws and codes were copied from foreign countries, usually through colonization and conquest, but sometimes through a process of voluntary transplantation. Depending on whether or not transplant countries adapted the transplanted laws to local conditions and/or had a population already familiar with the basic principles of the transplanted laws, they are divided into receptive and unreceptive transplants. It is established that transplant status is a significant determinant of current legal effectiveness or legality, with origins and receptive transplants enjoying the highest levels of legal effectiveness. Pistor et al. (2000) apply this analysis to the transition economies, and divide them into three categories: receptive transplants, unreceptive transplants and new transplants.

Since we employ more instruments that the number of endogenous variables, our model is over-identified. Therefore, we can test whether the instruments are uncorrelated with the error term, i.e. test for the validity of the instrument set. This is done through a test of the over-identifying restrictions. The test is summarized as follows: the structural model is estimated via 2SLS, and the residuals are then regressed via OLS on all exogenous variables (including the instruments). The R^2 from this regression is then multiplied by the number of observations, n, and this equals the test statistic. Under the null hypothesis that the instruments are uncorrelated with the error term, it is distributed as a Chi-square with degrees of freedom equal to the number of instruments minus the number of endogenous variables. Therefore, if we cannot reject the null hypothesis, the instruments pass the over-identification tests. In the instrumental variables regression output we show the value of the Sargan test statistic, which we have just described.

3.4.3 Multi-collinearity

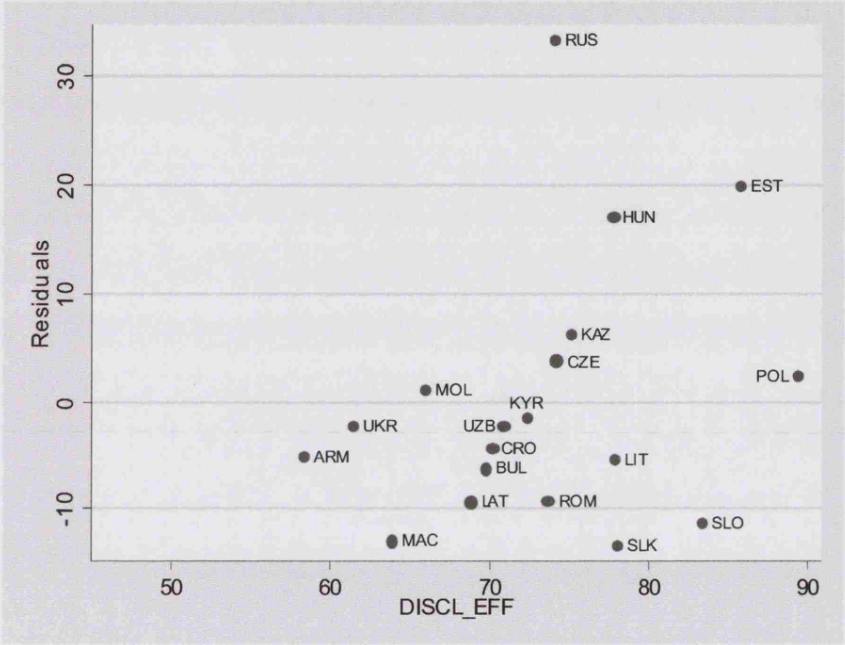
Some of our explanatory variables in the main regression specification are highly correlated. Their simultaneous inclusion in the regression specification would then result in multi-collinearity, which leads to larger standard errors of the estimated coefficients of the affected independent collinear variables, thereby reducing significance levels and making inferences difficult. Which are the collinear variables?

First, as explained above, we would like to control in the regressions for the level of economic development as measured by GDP per capita. There is a debate in the law and finance literature whether or not to include GDP per capita among the regressors. There are studies, e.g. La Porta et al. (1997) and (2003), which control for economic development. Most studies, however, choose to omit GDP per capita from regressions of financial development on legal development on grounds that the level of a country's economic development is usually highly correlated with

the legal development variables, and this induces multi-collinearity in a standard multiple regression estimation. It is a legitimate question whether such an omission is desirable, since one might argue that legal development might just reflect "a level of economic development" effect, rather than the quality of laws or their enforcement *per se.*

One way to overcome this problem is to regress financial development on GDP per capita, and to use the estimated residuals as the dependent variable in a new regression, which tests for the effect of the legal variables and the control variables. In this manner, we can investigate whether the legal variables offer any explanatory power over and above that provided by general economic development. We conduct this two-step procedure for all our securities regulation legal scores. However, this procedure entails serious problems. Importantly, it assumes that GDP per capita and the legal variables are independent. Only then would the first step of regressing financial development on GDP per capita yield unbiased and consistent estimates and residuals. Then the second step of regressing these residuals on legal development would also give unbiased and consistent parameter estimates. However, this assumption is likely to be violated if economic development and legal development are highly correlated (as indeed they are). In that case, the regression in the first step would suffer from omitted variable bias (due to the exclusion of legal development from the regressors), and therefore the estimated coefficients and residuals will be biased and inconsistent. The problem is carried over to the second step, and in a sense rather than dealing with multi-collinearity, it actually poses further, more serious problems of introducing bias and inconsistency. On the other hand, suspected multi-collinearity satisfies all the assumptions of efficiency, consistency and unbiasedness of the estimated OLS coefficients, and only affects the standard errors and the significance of the estimated coefficients. Therefore, acknowledging that multi-collinearity is most likely a problem, we do show regressions with GDP

Figure 3.7: Residuals of a Regression of Stock Market Capitalisation on (log) GDP per capita and a Constant, and Disclosure Requirements Effectiveness Sub-index

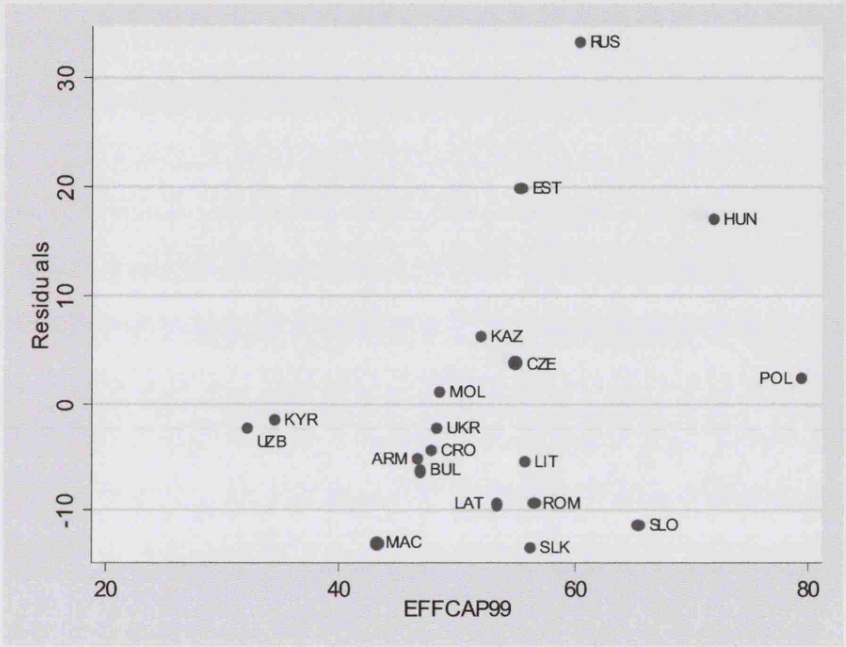


per capita alongside the legal development variables in our regressions. We also perform the two-step procedure, but note that it is subject to severe problems related to biased and inconsistent estimates.

Figures 3.7 and 3.8 depict the relation between the part of stock market capitalisation, non-attributable to GDP per capita, and effectiveness index of disclosure requirements (DISCL_EFF), and the effectiveness index of aggregate capital market regulation (EFFCAP99)

Similar two-step procedures to correct for multi-collinearity could also be applied to other correlated variables such as our extent-of-law and enforcement indices, as well as our composite indices. Table 3.4 shows the correlation matrix of the former, and indicates significant correlation coefficients in four of the five index pairs. Table 3.23 in Appendix 3.A shows the correlation among the composite indices of securities

Figure 3.8: Residuals of a Regression of Stock Market Capitalisation on (log) GDP per capita and a Constant, and Aggregate Capital Market Effectiveness Sub-index



regulation. However, given the problems associated with the two-step procedure, we also use extensiveness and effectiveness indices together in the OLS estimations.

3.5 Regression Results

3.5.1 Disclosure Rules

3.5.1.1 Market Capitalisation Regressions

In this section we describe the main regression results for the impact of legal extent and legal effectiveness of disclosure rules on stock market development, controlling for other potential determinants of stock market development. The dependent variable in these regressions is stock market capitalisation in 1999. In the next sec-

Table 3.4: Correlation Between Extenisveness and Effectiveness Scores of Securities Laws

	DISCL_EFF	INTERM_EFF	REGATTR_EFF	ENF_EFF	EFFCAP99
DISCL_EXT	0.3635*				
INTERM_EXT		0.5064**			
REGATTR_EXT			0.1581		
ENF_EXT				0.6609***	
EXTCAP99					0.7356***

Note: The table reports pairwise correlation coefficients. *** Significant at 1%; ** significant at 5%, * significant at 10%.

tion we will present robustness checks, using stock market capitalisation in 2000 (STOCK00).

First, we present the results on the impact of securities disclosure rules, as captured by lawyers' perceptions. The results in Table 3.5 indicate a strong, positive relation between each of the three disclosure indices and market capitalisation in 1999. Having voucher privatization as the main method of transfer of state ownership into private hands also has the expected positive sign, but is generally insignificant (it is also collinear with DISCL_EXT and DISCL, and we omit it from the specification testing for the impact of aggregate disclosure requirements). Regressions (4) and (5) in Table 3.5 show the results of the two-step procedure described earlier isolating the impact of GDP per capita and inflation. In a joint specification both DISCL_EXT and DISCL_EFF are statistically insignificant, most likely due to multi-collinearity. However, the effectiveness measure has a stronger impact than the extensiveness one, and is only marginally insignificant in this joint specification. After we omit DISCL_EXT from the specification (equation (5)), we find that the effectiveness of disclosure requirements (DISCL_EFF) re-gains significance, albeit

at the 10% level only. This is an indication that the effective use and application of securities disclosure rules, as perceived by the surveyed lawyers, has explanatory power for stock market development beyond that of general economic development (proxied by the log of GDP per capita), and macroeconomic stability (proxied by inflation).

As mentioned earlier, a potential lack of independence between GDP per capita and the legal indices of securities development casts doubts on the two-step procedure – and calls for including GDP per capita in the same regressions alongside the legal variables. Therefore, we run our main OLS regressions including the logarithm of GDP per capita among the regressors. The last column of Table 3.5 shows the OLS results for the effectiveness of disclosure index (DISCL_EFF) alongside the logarithm of GDP per capita (LGDPPC99). The logarithm of GDP per capita is significant at the 10% level, and DISCL_EFF is significant at the 5% level. GDP per capita is not significant in any of the other specifications. Among the three legal disclosure indices, only the enforcement one (DISCL_EFF) maintains significance with and without the VOUCHER dummy in the presence of the log of GDP per capita.

We then test for potential endogeneity of our legal variables by running instrumental variables (IV) regressions. Before we report the second-stage of the IV regressions, we first look at the first-stage results – i.e. the regression of the endogenous variable – in our case each of the three disclosure indices – on the instruments and the other exogenous variables, which enter the structural equation. We compare two sets of instruments – legal transplant status (TRANSPLANT_ST) and legal origin (LEGAL ORIGIN), and although both yield reasonable results, we find LEGAL ORIGIN more appropriate as an instrument for our disclosure measures. Panels A and B of Table 3.7 display the first-stage results for the two instrument sets.

Table 3.6 shows the second-stage results of the estimations using the LEGAL

Table 3.5: Disclosure Requirements and Stock Market Capitalisation, 1999. OLS Estimations

Independent variable	STOCK99	STOCK99	STOCK99	(4)	(5)	STOCK99
DISCL_EXT	0.7871***			0.1706		
	(0.2169)			(0.2524)		
DISCL_EFF		0.9829***		0.3917	0.5370*	0.6848**
		(0.2668)		(0.2593)	(0.2938)	(0.3055)
DISCL			0.9209***			
			(0.2757)			
VOUCHER	15.6956**	5.6028		11.1286	8.7204	7.7254
	(7.0250)	(6.8621)		(7.4012)	(6.4600)	(6.6561)
LGDPPC99						3.9459*
						(2.2396)
Intercept	-47.1***	-60.9***	-72.8**	-44.1*	-42.0*	-69.2***
	(14.4928)	(18.3999)	(29.32)	(23.0633)	(20.3004)	(21.2998)
Number of observations	19	19	19	19	19	19
Adjusted R-squared	0.37	0.37	0.35	0.21	0.20	0.38

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of (1) STOCK99 on the log of GDP per capita, inflation and a constant.

Table 3.6: Disclosure Requirements and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations Using 2SLS and Legal Origin as an instrument

Independent variable	STOCK99	STOCK99	STOCK99
DISCL_EXT	0.7260** (0.3261)		
DISCL_EFF		1.1214** (0.5153)	
DISCL			0.8851** (0.3818)
VOUCHER	14.6632** (5.5819)	6.0537 (6.0864)	11.3178** (5.2200)
Intercept	-42.5* (23.5618)	-71.1* (36.9920)	-54.0* (27.3555)
Number of observations	19	19	19
R-squared	0.37	0.32	0.41
F-test on first-stage equation	F(3, 15)=10.39 [0.0006]	F(3, 15)=3.46 [0.0433]	F(3, 15)=9.20 [0.0011]
Hausman test	0.05 [0.8227]	0.09 [0.7584]	0.35 [0.5523]
OIR test (Sargan test)	$\chi^2(1) = 0.901$ [0.3426]	$\chi^2(1) = 0.447$ [0.5036]	$\chi^2(1) = 0.772$ [0.3797]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown in square brackets for the F-test and diagnostic tests.

Table 3.7: Disclosure Requirements and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations: First-Stage Estimations

Dependent variable	DISCL_EFF	DISCL_EXT	DISCL
	Panel A: TRANSPLANT_ST, omitted category is Receptive Transplant (REC_TR)		
NEW_TR	-8.5830** (3.9113)	-11.9902** (4.9110)	-10.2831** (3.9736)
UNREC_TR	-6.1499 (5.7371)	5.8459 (7.2035)	-0.1545 (5.8285)
VOUCHER	-0.4596 (4.0281)	-10.7607** (5.0576)	-5.6124 (4.0923)
Intercept	77.1*** (2.4549)	77.0*** (3.0824)	77.1*** (2.4940)
No of obs	19	19	19
Adjusted R-sq	0.15	0.51	0.39
F-test	F(3, 15)=2.03 [0.1534]	F(3, 15)=7.14 [0.0033]	F(3, 15)=4.80 [0.0154]
	Panel B: LEGAL ORIGIN, omitted category is French legal origin		
German	9.5501* (4.5305)	12.2095** (5.5436)	10.8814** (4.1969)
Socialist	-0.0692 (5.0724)	-2.8432 (6.2067)	-1.4511 (4.6989)
VOUCHER	-1.2656 (3.6959)	-13.1427** (4.5224)	-7.2064* (3.4237)
Intercept	69.0*** (3.8585)	69.2*** (4.7214)	69.1*** (3.5744)
No of obs	19	19	19
Adjusted R-sq	0.29	0.61	0.58
F-test	F(3, 15)=3.46 [0.0433]	F(3, 15)=10.39 [0.0006]	F(3, 15)=9.20 [0.0011]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Standard errors shown in parentheses next to coefficient estimates. P-values shown in square brackets for the F-test.

ORIGIN dummies. All three legal variables are found significant. We perform two diagnostic tests. In none of the specifications in Table 3.6 is the Hausman test statistic significant, which indicates that there is no presence of endogeneity. Despite this evidence, we present both the IV and OLS results. The Sargan test of over-identifying restrictions is passed by all three reported IV estimations, thereby confirming that the instruments are valid.[17]

We interpret these results to mean that 1) the relationship between stock market capitalisation and the perceived effectiveness of disclosure rules is robust to controlling for economic development, method of privatization and inflation, and 2) that the same relationship is also robust to correcting for potential endogeneity between effectiveness of disclosure rules and stock market performance. We also find evidence that the extent of disclosure rules as proxied by the perceived extensiveness of disclosure rules in the securities laws is positively associated with market capitalisation and is robust to endogeneity, but not so to the inclusion of controls for income per capita. Finally, choosing a good instrument set improves the first-stage estimates and allows us to estimate the second-stage with better accuracy – moving from TRANSPLANT_ST to LEGAL ORIGIN as instruments for the legal indices reduces the standard error of the second-stage estimates and raises the significance

[17]Note that the Hausman test and the Sargan OIR test are implemented assuming conditional homoscedasticity. We have used robust standard errors in the IV regressions to correct for heteroscedasticity of any form. The relevant test statistic for tests of over-identifying restrictions would then be the Hansen J statistic. Tests indicate that most estimates pass this test. Only the INTERM_EFF and INTERM, as well as the EFFCAP99 and CAP99 regressions show a significant Hansen J statistic, thereby casting some doubts on the validity of the instruments. In addition, employing the Hausman test for endogeneity when estimating IV with robust standard errors sometimes generates negative test statistics. New techniques are now available to overcome the latter problem, see Baum, Schaffer and Stillman (2003) for a discussion of IV estimation and hypotheses testing, including different tests of endogeneity (Durbin-Wu-Hausman, Wu-Hausman), etc.

levels of the three disclosure legal measures, thereby supporting the simple OLS results.[18]

3.5.1.2 Market Turnover Regressions

We repeat the same regressions described above using the turnover ratio in 1999 as the dependent variable[19]. The results support the earlier finding that information disclosure rules exert a significant positive effect upon securities market development – both the index of extensiveness and the index of enforcement of disclosure requirements (DISCL_EXT and DISCL_EFF respectively) are significant and have the expected signs of the coefficients in OLS estimations of the turnover ratio, controlling for voucher privatization. It is not clear why the voucher privatization dummy should belong to this regression – but we choose to keep it to maintain comparability to the capitalisation regressions.[20] The disclosure enforcement index is significant at the 1% level, whereas the extensiveness and composite indices are significant at the 10% and 5% levels only (Table 3.8).

Utilising the two-step procedure to correct for the effect on turnover of GDP per capita and average inflation in succession, we find that none of the legal in-

[18]There is a literature which shows that weak instruments – i.e. low correlation between the instrumental variable and the endogenous variable – increases the inconsistency of the IV estimates, and reduces the power of hypothesis tests even in large samples, see Shea (1997) and Staiger and Stock (1997).

[19]We have tried different sources of information on market turnover such as the IFC Emerging Stock Markets Factbook (various issues), as well as the Standard and Poor's / IFC Emerging Markets Database (EMDB). Alternative measures for market turnover in some of our sample countries can be obtained from Claessens et al. (2000). The data on market turnover for several transition economies not covered by the EMDB have been obtained pooling the different sources and using stock exchange websites. These countries include Armenia, Azerbaijan, FYR Macedonia, Kazakhstan, Kyrgyzstan, Moldova, and Uzbekistan. Whenever these data come from stock exchange websites, they were double-checked for consistency with other published sources.

[20]Leaving the VOUCHER dummy out of the regressions does not change the results.

Table 3.8: Disclosure Requirements and Stock Market Turnover, 1999. OLS Estimations

Independent variable	TURNOVER99	TURNOVER99	TURNOVER99	(4)	(5)
DISCL_EXT	0.8985*			-0.6399	
	(0.4493)			(0.6312)	
DISCL_EFF		1.2746***		1.0236*	0.4351
		(0.3408)		(0.5023)	(0.3291)
DISCL			1.2030**		
			(0.4417)		
VOUCHER	5.2555	-6.6677	1.5504	-11.2742	-2.3667
	(8.0812)	(8.7496)	(7.3541)	(7.2674)	(7.9791)
Intercept	-39.2	-66.5***	-61.5**	-27.1	-31.0
	(28.5832)	(21.1830)	(27.5277)	(23.4295)	(21.4472)
Number of observations	18	18	18	18	18
Adjusted R-squared	0.20	0.26	0.25	0.09	0.04

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of (1) TURNOVER99 on the log of GDP per capita (LGDPPC99) and a constant.

dices retains its significance levels. In a specification which tests simultaneously for DISCL_EXT and DISCL_EFF the effectiveness index has a stronger impact, which is positive and significant; however, it is not found significant once we drop DISCL_EXT from the estimated regression. Since the two are highly correlated, the joint specification likely suffers from multi-collinearity. We also include GDP per capita in the main turnover regressions in the same manner done above for market capitalisation (output not shown). Thus, in the presence of LGDPPC99 only the effectiveness of disclosure index is found significant (with or without the VOUCHER dummy). The other two disclosure indices lose significance. These results suggest that – similarly to the capitalisation results – only the effectiveness of disclosure index has an any explanatory power over stock market turnover after controlling for the level of economic development.

The main OLS results are also confirmed by instrumental variables estimations, which are not reported here.[21]

Summing up, the turnover regression results are in line with the capitalisation results reported above. Like capitalisation – turnover appears to be affected by both the extent of disclosure rules in the securities laws and by their enforcement. Controlling for GDP per capita, however, leaves only the index of effective disclosure (DISCL_EFF) significant in both the capitalisation and turnover regressions. It appears that only the enforcement of disclosure rules is robust to controlling for economic development in the regressions, but this result should be taken with caution due to potential multi-collinearity when the log of GDP per capita enters the

[21] Correcting for potential endogeneity between TURNOVER99 and the legal indices in IV regressions using legal origin dummies as an instrument for the three legal indices on disclosure, we find that all three are significant in the second-stage regressions and have a positive sign. The instruments pass the F-tests of joint significance, and the first-stage regressions display a reasonable explanatory power. The second-stage regressions pass the Hausman and Sargan tests – i.e. endogeneity is not present, and the instruments employed are valid.

regression alongside the legal measures, and to estimation problems associated with the two-step procedure described earlier.

3.5.2 Intermediaries Regulations

3.5.2.1 Market Capitalisation Regressions

We next run the above estimations, using the subset of indices on regulation of capital market intermediaries. First, separate OLS estimations of the impact of the extensiveness and effectiveness sub-indices (INTERM_EXT and INTERM_EFF), shown in Table 3.9, reveal a positive and statistically significant association with stock market capitalisation in 1999. The aggregate index of market intermediary regulation (INTERM) is also statistically significant and has a positive sign. The voucher privatization dummy is not significant in any of the estimations.

Controlling for the logarithm of GDP per capita in the two-step procedure described earlier, we establish that INTERM_EFF still retains significance, albeit at a lower level than in the basic OLS model without controls for GDP per capita or inflation. In contrast, INTERM_EXT loses significance after we control for the effect of GDP per capita and past inflation. In a similar fashion, including the log of GDPPC99 alongside the legal indices of intermediaries regulation (see the last column of Table 3.9) supports the findings of the two-step procedure. It shows that the index of effectiveness of regulation securities intermediaries (INTERM_EFF) is significant – albeit at the 10% level – when GDP per capita is included simultaneously. The logarithm of GDP per capita is not significant in the latter specification, but is significant in the INTERM_EXT and INTERM regressions. The latter two indices are insignificant. Therefore, these results indicate a role for effective regulation over stock market intermediaries in benefiting stock market development. Furthermore, these results are consistent with the ones on effective disclosure rules benefiting stock market development in the presence of GDP per capita from the

Table 3.9: Regulation of Intermediaries and Stock Market Capitalisation, 1999. OLS Estimations

Independent variable	STOCK99	STOCK99	STOCK99	(4)	(5)	STOCK99
INTERM_EXT	0.3576*			-0.1162		
	(0.1780)			(0.1922)		
INTERM_EFF		0.4926***		0.3133*	0.2670*	0.3356*
		(0.1374)		(0.1773)	(0.1494)	(0.1671)
INTERM			0.5874***			
			(0.1871)			
VOUCHER	2.2547	3.4817	3.0005	7.7065	7.5566	6.3482
	(7.0978)	(6.6261)	(6.3704)	(6.5535)	(6.2192)	(6.0701)
LGDPPC99						4.0955
						(2.3605)
Intercept	-16.3	-8.1	-22.1**	-5.8	-13.1**	-33.2**
	(12.8211)	(5.5240)	(10.4068)	(13.0722)	(5.9720)	(15.1534)
Number of obs.	19	19	19	19	19	19
Adj. R-squared	0.10	0.31	0.27	0.20	0.19	0.37

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of (1) STOCK99 on the log of GDP per capita, inflation and a constant.

Table 3.10: Regulation of Intermediaries and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations Using 2SLS and Lagged SMINTEGR as an instrument

Independent variable	STOCK99	STOCK99	STOCK99
INTERM_EXT	0.9688* (0.4663)		
INTERM_EFF		0.5236*** (0.1713)	
INTERM			0.6775** (0.2344)
VOUCHER	1.9999 (7.0095)	3.5496 (6.6461)	3.0920 (6.2889)
Intercept	-64.7* (36.18.23)	-9.3 (7.2289)	-27.3* (13.3296)
Number of observations	19	19	19
R-squared	-	0.31	0.27
F-test on first-stage equation	F(4, 14)=2.66 [0.0767]	F(4, 14)=14.11 [0.0001]	F(4, 14)=14.48 [0.0001]
Hausman test	3.65 [0.0632]	0.11 [0.7354]	0.57 [0.4501]
OIR test (Sargan test)	$\chi^2(2) = 2.166$ [0.3386]	$\chi^2(2) = 3.679$ [0.1589]	$\chi^2(2) = 3.255$ [0.1964]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-test and diagnostic tests.

Table 3.11: Regulation of Intermediariess and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations: First-Stage Regressions using Lagged SMINTEGR Values

Dependent variable	INTERM_EFF	INTERM_EXT	INTERM
SMINTEGR96	-2.7460* (1.2881)	-0.9026 (1.6003)	-1.9169* (0.9940)
SMINTEGR94	9.6319*** (2.0463)	6.7487** (2.5423)	8.3345*** (1.5791)
SMINTEGR92	3.6060* (1.9356)	-0.4486 (2.4047)	1.7805 (1.4937)
VOUCHER	-7.2210 (4.1965)	-0.0771 (5.2136)	-7.2064* (3.4237)
Intercept	30.4*** (4.5083)	71.1*** (5.6010)	48.7*** (3.4790)
No of obs	19	19	19
Adjusted R-sq	0.74	0.27	0.75
F-test	F(4, 14)=14.11 [0.0001]	F(4, 14)=2.66 [0.0767]	F(4, 14)=14.48 [0.0001]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Standard errors shown in parentheses next to coefficient estimates. P-values shown in square brackets for the F-test.

previous sub-section.

In the instrumental variables (IV) estimations, we again explore the relevance of the instruments first. We test several instrument sets and find that lagged values of the stock market integrity index (SMINTEGR) perform best in the first-stage regressions (Table 3.11). In the second-stage regressions all three legal indices are found significant (Table 3.10). In the IV diagnostic tests only the INTERM_EXT regression reveals endogeneity; in the other two regressions do not indicate that endogeneity is present. The instruments also pass the test of over-identifying re-

strictions for all three estimations.

3.5.2.2 Market Turnover Regressions

We repeat the same analysis performed for stock market capitalisation above. We find that both the extensiveness of regulation of securities market intermediaries and the enforcement of regulations on market intermediation affect market turnover. In separate regressions of the turnover ratio (TURNOVER99) on INTERM_EXT and INTERM_EFF, we find that the effectiveness index displays a higher significance than the extensiveness index (see Table 3.12). The aggregate composite index of intermediary regulation (INTERM) has also a positive and significant effect on market turnover. The voucher privatization dummy (VOUCHER) has a negative effect, but is not statistically significant.

Utilising the residuals from the two-step procedure controlling for the level of economic development, we find that neither INTERM_EXT, nor INTERM_EFF is significant. Therefore, controlling for GDP per capita (and for inflation) in the usual two-step procedure leads our legal indices to lose significance. However, controlling for the logarithm of GDP per capita (LGDPPC99) in the regressions of TURNOVER99 on the legal variables leaves both the legal variables and LGDPC99 insignificant. This is most likely due to multi-collinearity (the pairwise correlation coefficient between LGDPPC99 and INTERM_EFF is 0.61, which is significant at the 1% level).

Finally, we run IV regressions and employ the values of SMINTEGR for earlier years as instruments for our legal variables. Similarly to the results of capitalisation, we find that the lagged SMINTEGR indices work best in the first-stage regressions[22]. The results of the IV regressions indicate that all three legal variables maintain

[22]The first-stage results are not shown to save space, but are similar to those reported earlier in the capitalisation sub-section.

Table 3.12: Regulation of Intermediaries and Stock Market Turnover, 1999. OLS Estimations

Independent variable	TURNOVER99	TURNOVER99	TURNOVER99	(4)	(5)
INTERM_EXT	0.8026*			0.1150	
	(0.4034)			(0.5917)	
INTERM_EFF		0.7783**		0.2334	0.2772
		(0.3254)		(0.4729)	(0.3729)
INTERM			1.0159**		
			(0.4562)		
VOUCHER	-9.9251	-6.8465	-8.1729	-2.7179	-2.4057
	(9.4941)	(9.2861)	(8.9023)	(8.2322)	(8.3548)
Intercept	-36.7	-4.0	-31.5	-17.5	-10.2
	(30.8894)	(11.4447)	(24.7158)	(41.2116)	(14.0083)
Number of observations	18	18	18	18	18
Adjusted R-squared	0.17	0.32	0.31	0.06	0.05

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of TURNOVER99 on the log of GDP per capita (LGDPPC99) and a constant.

significance in the second-stage regressions, which is in line with the capitalisation results reported above. Again, the Hausman test does not indicate presence of endogeneity in the first place; the instruments passed the tests of over-identifying restrictions.

3.5.3 Enforcement Powers of Regulator

3.5.3.1 Market Capitalisation Regressions

We next check for the significance of the Enforcement Powers of the Regulator measures, including legal prohibitions of insider trading and their enforcement. None of the indices of Enforcement Powers of the Regulator are significant in these regressions, shown in Table 3.13. Correcting for inflation and GDP per capita in a two-step procedure (estimations 4 and 5) leaves all three legal indices insignificant as well. The explanatory power of these estimations is rather low. These results also hold when LGDPPC99 is included in the same specification as the legal variables.[23]

These results suggest that the enforcement powers of the securities regulator (such as ability to revoke issuer's licenses and impose civil penalties; insider trading prohibitions, and their enforcement in practice) are not significantly associated with market capitalisation[24].

We test several instrument sets and find that lagged values of SMINTEGR work well in the first stage regressions for ENF_EFF and ENF; however, transplant status dummies perform best for ENF_EXT. In the second-stage regressions ENF_EFF and ENF are found significant, but not ENF_EXT. Employing alternative instruments

[23]These last results are not shown to save space. They are available upon request.

[24]Looking at more disaggregated forms of these indices, we find some evidence of a positive association between legal prohibitions of insider dealing being comprehensive and market capitalisation, and effective use of Regulatory powers to revoke licenses and fine securities issuers and market capitalisation. We do not report these regressions for considerations of space. They are available upon request.

Table 3.13: Enforcement Powers of Regulator and Stock Market Capitalisation, 1999. OLS Estimations

Independent variable	STOCK99	STOCK99	STOCK99	(4)	(5)
ENF_EXT	0.2955			-0.0163	
	(0.2222)			(0.2323)	
ENF_EFF		0.3133		0.1342	0.1283
		(0.2254)		(0.2162)	(0.1921)
ENF			0.4155		
			(0.2688)		
VOUCHER	2.4883	6.2717	4.5274	8.6252	8.5560
	(7.3520)	(7.7994)	(7.2281)	(8.1344)	(7.6744)
Intercept	-8.0	-5.2	-14.0	-8.5	-9.3
	(15.0089)	(13.5943)	(17.6348)	(15.6567)	(11.6396)
Number of observations	19	19	19	19	19
Adjusted R-squared	0.07	0.15	0.14	0.11	0.11

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of (1) STOCK99 on the log of GDP per capita, inflation and a constant.

Table 3.14: Enforcement Powers of Regulator and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations Using 2SLS and Lagged SMINTEGR as an instrument

Independent variable	STOCK99	STOCK99	STOCK99
ENF_EXT	0.3584 (0.4037)		
ENF_EFF		0.5906***	
		(0.1703)	
ENF			0.8776***
			(0.2764)
VOUCHER	2.5063 (7.2822)	9.6963 (7.0428)	6.8894 (7.1584)
Intercept	-12.3 (27.2818)	-20.5* (11.0414)	-43.1** (18.9943)
Number of observations	19	19	19
R-squared	0.07	0.04	-
F-test on first-stage equation	F(3, 15)=2.80 [0.0761]	F(4, 14)=6.73 [0.0031]	F(4, 14)=3.51 [0.0348]
Hausman test	0.03 [0.8660]	3.26 [0.0708]	2.73 [0.0983]
OIR test (Sargan test)	$\chi^2(1) = 2.139$ [0.1436]	$\chi^2(2) = 2.082$ [0.3530]	$\chi^2(2) = 2.490$ [0.2880]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-test and diagnostic tests. The regression of ENF_EXT uses TRANSPLANT_ST dummies in the first stage.

Table 3.15: Enforcement Powers of Regulator and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations: First-Stage Regressions Using Lagged SMINTEGR Values

Dependent variable	ENF_EFF	ENF_EXT	ENF
SMINTEGR96	-1.4544 (1.9063)	-1.2832 (1.9884)	-1.3510 (1.6008)
SMINTEGR94	5.6409* (3.0283)	2.3289 (3.1588)	3.6536 (2.5430)
SMINTEGR92	6.6707** (2.8644)	2.7050 (2.9879)	4.2909* (2.4054)
VOUCHER	-18.1118** (6.2103)	-3.3602 (6.4779)	-9.2606* (5.2151)
Intercept	44.6*** (6.6717)	65.8*** (6.9592)	57.3*** (5.6026)
No of obs	19	19	19
Adjusted R-sq	0.56	-0.04	0.36
F-test	F(4, 14)=6.73 [0.0031]	F(4, 14)=0.84 [0.5220]	F(4, 14)=3.51 [0.0348]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Standard errors shown in parentheses next to coefficient estimates. P-values shown in square brackets for the F-test.

such as RELIGION and YRCOMM (results not reported) also works well in the first stage, but all three enforcement powers indices are then found insignificant in the second-stage regressions.

Therefore, the IV results on Enforcement Powers of the Regulator are less conclusive than the ones on Disclosure Rules and Intermediary Regulation. The second-stage results are not robust to different instrument sets, and display a generally weaker association with STOCK99. The Hausman test statistic is significant at 10% for the ENF_EFF and ENF regressions, indicating that endogeneity is an issue.

The Sargan test is passed by all three regressions – i.e. the instruments appear to be valid.

Thus, our regression analysis does not show a robust and significant association between stock market development and the powers afforded to the Securities Regulator. These results hold when controlling for GDP per capita and inflation, and are generally supported by IV regression output controlling for potential endogeneity of legal and stock market development.

3.5.3.2 Market Turnover Regressions

We also test for the impact of the Enforcement Powers of the Securities Regulator on stock market turnover. We find that all three legal indices (ENF_EXT, ENF_EFF and ENF) are significant at the 5% level in separate OLS regressions of TURNOVER99, controlling for voucher privatization (Table 3.16). These results are in contrast to the ones on market capitalisation, where the three legal indices are insignificant. Therefore, enforcement powers of the Regulator seem to matter for market liquidity but not for market size.

In the two-step procedure to control for GDP per capita neither ENF_EXT nor ENF_EFF is significant, although ENF_EXT has a stronger positive effect. The two however are highly correlated (correlation coefficient is 0.66), so the joint specification suffers from multi-collinearity, which reduces the significance levels of the variables. Given the bias associated with the two-step procedure, we also perform additional tests by including the logarithm of GDP per capita (LGDPPC99) alongside the legal variables in OLS estimations. In all three separate specifications, each of the three legal indices and the logarithm of GDP per capita are found significant at the 10% level. Therefore, there is some evidence that controlling for GDP per capita does not weaken the impact of the legal indices of Enforcement Powers on market turnover. This is in contrast to the results for the effect of Enforcement

Table 3.16: Enforcement Powers of Regulator and Stock Market Turnover, 1999. OLS Estimations

Independent variable	TURNOVER99	TURNOVER99	TURNOVER99	(4)	(5)
ENF_EXT	0.8733**			0.4393	
	(0.3597)			(0.3822)	
ENF_EFF		0.5845**		0.0398	0.2737
		(0.2410)		(0.2707)	(0.2347)
ENF			0.8497**		
			(0.3493)		
VOUCHER	-11.2773	-4.8516	-8.0262	-4.1802	-1.3056
	(10.2900)	(8.1954)	(8.4986)	(10.0174)	(7.9899)
Intercept	-29.9	-3.3	-23.8	-29.7	-13.2
	(21.0236)	(9.9400)	(19.0629)	(19.7199)	(10.4240)
Number of observations	18	18	18	18	18
Adjusted R-squared	0.35	0.29	0.37	0.14	0.08

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of TURNOVER99 on the log of GDP per capita (LGDPPC99) and a constant.

Powers on capitalisation.

Next, we perform the instrumental variables (IV) estimations using country legal transplant status (TRANSPLANT_ST) as the instrument for the suspected endogenous legal variables. The IV regression results support the OLS findings in that all three enforcement powers indices are found significant in the second stage of the 2SLS regressions. The TRANSPLANT_ST instrument set performs reasonably well in explaining the variability of the endogenous variables[25]. All three regressions pass the Sargan test of over-identifying restrictions; and in none of them is endogeneity detected.

Altogether, we find some evidence that the enforcement powers of the Securities Regulator – as embodied in the extent-of-law and enforcement indices – have a positive impact upon market turnover, but not so on capitalisation. The IV evidence of a positive significant impact of ENF_EFF and ENF on capitalisation is not particularly robust to different instrument sets and does not permit us to make inferences with a reasonable degree of confidence. However, both the IV and OLS results indicate a significant positive impact of Enforcement Powers of the Regulator on market turnover, even after controlling for GDP per capita. This is a case of different results for capitalisation and turnover.

[25]Alternative instruments were also tested and found to perform well in explaining the three Enforcement Powers legal indices. Among these are LEGAL ORIGIN (with or without the VOUCHER dummy) and Years under Communism (YRCOMM). The instrumented legal variables are then found significant in the second stage for Legal Origin. Years under communism, however, produces different results in the second stage, depending on whether or not VOUCHER is included in the equation. These results are not shown to save space, and are available upon request.

3.5.4 Regulator Attributes

3.5.4.1 Market Capitalisation Regressions

We next test for the effect of Regulator Attributes on market development. We find only weak evidence that regulatory attributes have a significant association with stock market capitalisation (Table 3.17). For example, in the separate OLS regressions the index of effectiveness of Regulator Attributes (REGATTR_EFF) is found positively and significantly associated with market capitalisation. The aggregate index of Regulator Attributes (REGATTR) is also significantly associated with market capitalisation, albeit at a lower level of significance. However, having controlled for GDP per capita and inflation, we do not find any of the legal indices significant. The same result holds if we include the logarithm of GDP per capita in the regression alongside the Regulator Attributes measures.

We attempt instrumenting the three Regulator Attributes indices by a set of different potential instruments such as TRANSPLANT_ST, LEGAL ORIGIN, RELIGION, lagged values of SMINTEGR, etc. All the first-stage regressions however reveal weak instruments, and the legal measures are consistently insignificant at the second stage. Consequently, we do not report any IV results.

These results indicate no particular role for the legal provisions about existence and independence of the Regulator, and some role for an effective Regulator (REGATTR_EFF is built upon answers to the question whether the Regulator has trained and knowledgeable professional staff). The basic OLS results, however, are not robust to controlling for GDP per capita and inflation; corrections for endogeneity are difficult due to the weakness of the instruments.[26] These results are not entirely surprising, given the limited content of the Regulator Attributes indices.

In summary, we do not find any evidence from the regression analysis that the

[26]The capitalisation results are confirmed by results for turnover with the only difference that REGATTR_EFF is no longer significant in the OLS regression.

Table 3.17: Regulator Attributes and Stock Market Capitalisation, 1999. OLS Estimations

Independent variable	STOCK99	STOCK99	STOCK99
REGATTR_EXT	0.3279 (0.3446)		
REGATTR_EFF		0.1801** (0.0677)	
REGATTR			0.3979* (0.2205)
VOUCHER	1.5975 (7.7157)	1.4614 (7.3418)	1.2048 (7.5078)
Intercept	-16.8 (29.9345)	-2.5 (4.9964)	-22.3 (17.9893)
Number of obs.	19	19	19
Adj. R-squared	0.05	0.11	0.09

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates.

legal indices of Regulatory Attributes (REGATTR_EXT, REGATTR_EFF and REGATTR) have any significant explanatory power for market turnover and market capitalisation[27].

3.5.5 Aggregate Indices of Securities Regulation

3.5.5.1 Market Capitalisation Regressions

In this sub-section we present evidence of the impact of the aggregate indices of securities laws and their enforcement on stock market development. Our results indicate that the aggregate measures of extent of securities laws, as perceived by the lawyers, and their enforcement exert a significant and positive impact upon stock market

[27]We do not report these results for considerations of space. They are available upon request.

Table 3.18: Aggregate Indices of Securities Regulation and Stock Market Capitalisation, 1999. OLS Estimations

Independent variable	STOCK99	STOCK99	STOCK99	(4)	(5)	STOCK99
EXTCAP99	0.9421**.			-0.1038		
	(0.3458)			(0.4185)		
EFFCAP99		0.7429***		0.4257	0.3781*	0.5897*
		(0.2101)		(0.2853)	(0.2112)	(0.3054)
CAP99			0.9846***			
			(0.2901)			
VOUCHER	5.7735	5.3674	6.1138	8.2996	8.4806	6.6945
	(6.5240)	(6.0441)	(5.9615)	(6.4352)	(6.3041)	(5.8112)
LGDPPC99						2.4725
						(2.8988)
Intercept	-60.4**	-28.3**	-53.3**	-17.4	-22.7*	-39.1**
	(24.9516)	(10.786)	(18.5369)	(24.3876)	(11.1161)	(14.0999)
Number of observations	19	19	19	19	19	19
Adjusted R-squared	0.26	0.39	0.38	0.20	0.20	0.40

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of (1) STOCK99 on the log of GDP per capita, inflation and a constant.

Table 3.19: Aggregate Indices of Securities Regulation and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations Using 2SLS and Lagged SMINTEGR as an instrument

Independent variable	STOCK99	STOCK99	STOCK99
EXTCAP99	0.3509 (0.4972)		
EFFCAP99		0.7217***	
		(0.2351)	
CAP99			1.0482***
			(0.3379)
VOUCHER	3.6591 (6.1418)	5.2829 (6.1647)	6.3534 (6.1009)
Intercept	-14.9 (37.3163)	-27.2** (12.6591)	-57.5** (22.3756)
Number of observations	19	19	19
R-squared	0.16	0.39	0.38
F-test on first-stage equation	F(3, 15)=4.39 [0.0209]	F(4, 14)=17.16 [0.0000]	F(4, 14)=9.86 [0.0005]
Hausman test	1.70 [0.1928]	0.04 [0.8455]	0.11 [0.7423]
OIR test (Sargan test)	$\chi^2(1) = 2.804$ (0.0941)	$\chi^2(2) = 3.589$ (0.1662)	$\chi^2(2) = 3.112$ (0.2110)

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-test and diagnostic tests. The regression of EXTCAP99 uses TRANSPLANT_ST dummies in the first stage.

Table 3.20: Aggregate Indices of Securities Regulation and Stock Market Capitalisation, 1999. Instrumental Variables (IV) Estimations: First-Stage Regressions

Dependent variable	EFFCAP99	EXTCAP99	CAP99
SMINTEGR96	-1.6833* (0.8852)	-0.4171 (1.0633)	-1.0095 (0.8353)
SMINTEGR94	6.0311*** (1.4063)	3.0148* (1.6891)	4.4261*** (1.3270)
SMINTEGR92	3.9602** (1.3302)	1.3600 (1.5977)	2.5780* (1.2552)
VOUCHER	-8.2153** (2.8840)	-4.8327 (3.4639)	-6.4144** (2.7213)
Intercept	46.2*** (3.0982)	72.0*** (3.7213)	59.9*** (2.9235)
No of obs	19	19	19
Adjusted R-sq	0.78	0.27	0.66
F-test	F(4, 14)=17.16 [0.0000]	F(4, 14)=2.65 [0.0773]	F(4, 14)=9.86 [0.0005]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Standard errors shown in parentheses next to coefficient estimates. P-values shown in square brackets for the F-test.

capitalisation. The three OLS regressions, including EXTCAP99, EFFCAP99 and CAP99 one at a time, and shown in Table 3.18, point to the significance of each of these indices. After controlling for GDP per capita and average inflation (equations 4 and 5 in Table 3.18), we find that in a joint specification both EXTCAP99 and EFFCAP99 lose significance (likely due to multi-collinearity). Omitting EXTCAP99 from the regression shows that the enforcement of securities laws (EFFCAP99) regains significance, but at a lower level (10%). Similarly, controlling for GDP per capita in our main regression leaves only EFFCAP99 and CAP99 significant, but not the aggregate extensiveness index (EXTCAP99). The logarithm of GDP per

capita is never significant.

We test different instrument sets and establish that lagged SMINTEGR values work best in the first-stage regressions for EFFCAP99 and CAP99; in contrast, TRANSPLANT_ST performs best for EXTCAP99.[28] We then go on to use the SMINTEGR lagged values and find that all three legal measures are significant in the second-stage regressions. However, SMINTEGR is a somewhat weak instrument for EXTCAP99, therefore the latter's significance in the second stage must be taken with caution (and is not shown). For this reason, in the case of EXTCAP99 we choose to use transplant dummies, which explain more of its variation than SMINTEGR does in the first-stage regressions. Table 3.19 shows these combined second-stage results. The Hausman test again shows no presence of endogeneity in all three regressions. The EFFCAP99 and the CAP99 regressions pass the Sargan test, whereas the EXTCAP99 regression does not pass it at the 10% level (although it passes at the 5% level), thus causing some doubts about the validity of the TRANSPLANT_ST instruments in this regression.

These results suggest two things: first, our aggregate legal indices affect stock market development as proxied by market capitalisation positively and significantly. However, only the results of the enforcement of securities regulation are robust to controlling for economic development, and for endogeneity in the main model. The results for the extent-of-law measure in the second-stage IV regressions are mixed, whereas the enforcement measure is always significant in the second-stage IV results.

[28] We also explore alternative instruments such as RELIGION (defined here as Muslim, Orthodox and Catholic-Protestant) and the SMINTEGR indices, and both are used without the VOUCHER control. They work well in the first stage. In both cases, all three aggregate legal indices are significant in the second-stage regressions for STOCK99.

3.5.5.2 Market Turnover Regressions

Finally, we conduct the OLS and IV estimations for market turnover using the aggregate indices of securities regulation (EXTCAP99, EFFCAP99 and CAP99). In separate OLS estimations we find that each of the three legal indices is significant at the 5% level for market turnover in the presence of the VOUCHER dummy. All three explain about 38% to 40% of the variation in TURNOVER99 (Table 3.21).

Controlling for GDP per capita in the two-step procedure renders both the enforcement index of securities regulation (EFFCAP99) and the extent-of-law one (EXTCAP99) insignificant, even though they both have a positive effect on market turnover. However, if we include the logarithm of GDP per capita in each estimation we find that the legal indices generally maintain significance, while GDP per capita is never significant (output not shown). Among the three legal indices, the extensiveness and aggregate one (EXTCAP99 and CAP99) are still significant at the 10% level, while the effectiveness one (EFFCAP99) narrowly misses significance at the 10% level.

The IV results support the OLS findings: each of the three aggregate legal indices is significant, with the extensiveness one being significant at the 1% level in the second-stage IV regression, using country legal transplant status dummies as an instrument. The effectiveness and aggregate indices are found significant at the 5% level. The first-stage regressions results point to transplant status, religion and lagged SMINTEGR indices performing well for the three aggregate legal measures.[29] Thus, in line with the rest of the turnover results, and in contrast to the same of the IV results for capitalisation, we find that all three legal variables have explanatory power over market turnover.

Overall, all results reported for the five thematic disaggregated indices of securi-

[29]We do not report these results to save space. They are similar to the first-stage results for capitalisation.

Table 3.21: Aggregate Indices of Securities Regulation and Stock Market Turnover, 1999. OLS Estimations

Independent variable	TURNOVER99	TURNOVER99	TURNOVER99	(4)	(5)
EXTCAP99	1.6081**			0.3103	
	(0.5813)			(0.9238)	
EFFCAP99		1.0745**		0.2289	0.3962
		(0.4003)		(0.6687)	(0.4252)
CAP99			1.4356**		
			(0.5297)		
VOUCHER	-6.1194	-6.1244	-5.9041	-2.0377	-2.1209
	(8.4351)	(8.6061)	(8.1711)	(8.5021)	(8.2863)
Intercept	-94.3	-29.9	-66.2	-34.6	-20.1
	(41.6830)	(19.2428)	(32.7329)	(47.3717)	(20.7490)
Number of observations	18	18	18	18	18
Adjusted R-squared	0.37	0.38	0.41	0.08	0.07

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is the residual of an OLS regression of TURNOVER99 on the log of GDP per capita (LGDPPC99) and a constant.

ties regulation indicate that both better disclosure regulation and better regulation of intermediaries appear to raise stock market capitalisation and turnover, regardless of the estimation technique employed. The results also suggest that stronger Enforcement Powers of the Securities Regulator – as measured by the LIS respondents' opinions – enhance market liquidity but have no significant effect on market capitalisation. Finally, the attributes of the Securities Regulator appear irrelevant for stock market development, but this may be due to the way this variable is measured. Finally, we also observe differential effects of controlling for GDP per capita alongside the legal indices – generally, the enforcement indices maintain significance, whereas the extent-of-law ones do not.

3.6 Robustness Checks and Discussion

3.6.1 Alternative Dependent Variables

As mentioned earlier, we subject our results to a set of robustness tests to see whether the main results described in the previous section still hold. For example, we test the main regression model, using stock market capitalisation data for 2000 (STOCK00) instead of 1999[30]. We conduct the same regressions for each of our four main thematic sub-indices, and for the aggregate indices, controlling for voucher privatization in the first instance, and then also for GDP per capita and average inflation. In the basic OLS estimations for each of the three thematic indices, we find support for our earlier findings. If anything, the basic OLS results for STOCK00 are even stronger and display a better fit than those for STOCK99. The first three

[30]There are many missing observations for stock market capitalisation and turnover in 2001 and 2002 in the World Development Indicators (2003) data, as well as in the 2003 EBRD Transition Report, seriously reducing the number of observations. Hence, we do not use the capitalisation and turnover data for these years.

columns of Table 3.22, for instance, show the basic OLS results for the Disclosure extensiveness, effectiveness and aggregate indices. All are significant at the 1% level, alongside the voucher privatization dummy, which loses significance only in the DISCL_EFF regression. Thus, they echo the results of Table 3.5. Controlling for GDP per capita in the main OLS regression alongside the extensiveness and effectiveness legal variables included together (output not shown) reveals that the indices of effective disclosure rules (DISCL_EFF) and effective regulation of market intermediaries (INTERM_EFF) are significant and have the correct sign, whereas their extensiveness counterparts are not. The two maintain their significance in the presence of the log of GDP per capita and the voucher dummy. However, the effective use of regulatory enforcement powers and regulator attributes are not found to produce a significant impact, once GDP per capita is controlled for. These regressions, however, are probably suffering from multi-collinearity.[31]

The results described for the three disclosure indices also hold for other measures of securities regulation – such as the three sets of indices on intermediaries, regulatory attributes and enforcement powers. Thus, in line with the basic OLS results for STOCK99, the significance levels attained by the INTERM_EFF, INTERM_EXT and INTERM indices are maintained. Using the residual from successive regressions of STOCK00 on the log of GDP per capita and inflation, leaves the INTERM_EFF index insignificant in the presence of a marginally significant VOUCHER dummy. In a regression controlling for the log of GDP per capita directly, however, IN-

[31] Controlling in succession for GDP per capita (LGDPPC99) and inflation (AVINFL) in the usual two-step procedure (column 4 of Table 3.22), we find that none of the explanatory variables are significant. Eliminating DISCL_EXT, leaves DISCL_EFF insignificant, but raises the effect of the voucher privatization dummy – significant at 10%. These last results are in contrast to those reported in columns 4 and 5 of Table 3.5, where DISCL_EFF maintains significance even after controlling for GDP per capita and average inflation. Since the two-step procedure suffers from some problems of omitted variable bias, however, we do not attach too much importance to these results.

TERM_EFF is significant.. The results for the other two variables (Enforcement Powers and Regulator Attributes) are also corroborated when using STOCK00 as the dependent variables, with the only difference that the Regulator's Powers indices are significant in the STOCK00 basic OLS regressions (but not after controlling for GDP and inflation).

Correcting for potential endogeneity through IV estimations for the main regressions using STOCK00 as the dependent variable, employing legal origin as an instrument for the Disclosure indices, confirms the earlier results – all three Disclosure legal indices (DISCL_EFF, DISCL_EXT and DISCL) are significant in the second stage. The instruments work well. Similarly, the results for intermediary regulation and its impact on STOCK99 are also confirmed – all three indices (INTERM_EFF, INTERM_EXT and INTERM) are significant in the IV regressions using lagged SMINTEGR values as instruments. The Enforcement Powers indices are also significant in the IV regressions, using appropriate instruments (the lagged SMINTEGR indices for ENF_EFF and ENF, and TRANSPLANT_ST for ENF_EXT), however sometimes the instruments are not very strong. Some of the Regulatory Attributes indices are again difficult to instrument, although reasonable results are obtained using TRANSPLANT_ST for REGATTR. Finally, the aggregate index of effectiveness EFFCAP99 and the index of CAP99 are both significant at the 1% level, using lagged SMINTEGR values as instruments. The extensiveness index (EXTCAP99) is also significant (as in the STOCK99, its instrument is TRANSPLANT_ST).

Overall the OLS and IV results for STOCK00 are as expected, and in some cases even stronger than those for STOCK99. We show only the OLS results to save space.

Table 3.22: Disclosure Requirements and Stock Market Capitalisation, 2000. OLS Estimations

Independent variable	STOCK00	STOCK00	STOCK00	(4)	(5)
DISCL_EXT	0.6427***			0.0088	
	(0.1653)			(0.2299)	
DISCL_EFF		0.6972***		0.2241	0.2314
		(0.1833)		(0.1796)	(0.2040)
DISCL			0.7877***		
			(0.1903)		
VOUCHER	11.6189***	2.0203	7.9819**	4.5146	4.3821*
	(2.3431)	(3.7143)	(2.7735)	(2.8794)	(2.3919)
Intercept	-37.8***	-40.8***	-47.9***	-18.0	-17.9
	(10.6610)	(12.2319)	(12.9681)	(15.9642)	(13.5939)
Number of observations	19	19	19	19	19
Adjusted R-squared	0.54	0.45	0.58	0.16	0.16

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. Estimations (4) and (5)'s dependent variable is derived as: (1) get the residual of an OLS regression of STOCK00 on the log of GDP per capita and a constant , and 2) the residual of the latter on inflation and a constant.

3.7 Conclusions

The results of this chapter support previous findings in this field, e.g. Pistor et al. (2000), about the role of legal enforcement on financial market development in transition. Furthermore, our results are based upon disaggregated indices of stock market laws – such as information disclosure requirements, regulation of market intermediaries, Regulator's attributes and enforcement powers – and indicate that disclosure rules and intermediary regulation rules are significantly associated with higher market capitalisation and turnover, usually through their enforcement (effectiveness) component. We find weak evidence that the Regulator's attributes and powers affect stock market capitalisation, but do find that stock market turnover is significantly higher with better enforcement powers of the Securities Regulator (both extent-of-law and effectiveness measures).

Our results are not definitive but merely suggestive. First, we rely on a small sample of observations covering at most 19 countries. As explained earlier, we face problems measuring stock market development in transition economies due to privatization-related listings. In addition, our legal measures utilise perception-based survey responses, and do not record the precise provisions of the law, although a lot of care is taken in Chapter 2 in explaining the value of the legal survey approach. Aside from the quality of the data, we encounter estimation problems, such as the inability to isolate economic from legal development, and difficulties in obtaining good instruments for our legal measures. Nonetheless, the results and the approach followed are useful and provide new information about the way securities laws and regulations and their enforcement affect market size and liquidity, and enable us to pin down those areas of the law (such as information disclosure or intermediary regulation), which appear to have a robust effect on securities market development.

Altogether, our study is supportive of recent findings, e.g. La Porta et al. (2003), that private enforcement through stricter information disclosure and liability rules

is associated with better stock market performance across a broad cross-section of countries (but not including the transition economies). La Porta et al. (2003) also establish that securities supervisory powers and attributes, as captured by their index of Public Enforcement, are not significantly associated with stock market development. Our results are in line with these findings, and help shed some more light by expanding the scope of these indices. For instance, we are able to assess the impact of better securities intermediary regulation, which has been discussed extensively in the literature, e.g. Glaeser et al. (2001) for Poland and the Czech Republic, by including some additional information and expanding the number of sample countries.

Appendix 3.A Data Tables

Table 3.23: Correlation Between Different Aspects of Securities Laws

	DISCL	INTERM	REGATTR	ENF
DISCL	1.0000			
INTERM	0.5387***	1.0000		
REGATTR	0.3501	0.1336	1.0000	
ENF	0.4339**	0.5270***	0.3931*	1.0000

Note: The table reports pairwise correlation coefficients. *** Significant at 1%; ** significant at 5%, * significant at 10%.

Table 3.24: Definition of Variables

Variable	Description
STOCK99	Stock market capitalisation, % of GDP, 1999.
STOCK00	Stock market capitalisation, % of GDP, 2000.
TURNOVER99	Stock market turnover, 1999.
TURNOVER00	Stock market turnover, 2000.
AVINFL	Average annual rate of inflation, 1994-1999.
LGDPPC99	Logarithm of GDP per capita, 1999.
VOUCHER	Dummy for mass voucher privatization.
TRANSPLANT_ST	Dummy for country legal transplant status.
DISCL_EXT	Index of extensiveness of legal disclosure rules.
DISCL_EFF	Index of effectiveness (enforcement) of legal disclosure rules.
DISCL	Aggregate index of legal disclosure rules.
INTERM_EXT	Index of extensiveness of legal rules on market intermediaries.
INTERM_EFF	Index of effectiveness of legal rules on market intermediaries.
INTERM	Aggregate index of legal rules on market intermediaries.
ENF_EXT	Index of extensiveness of legal powers of enforcement of the Regulator.
ENF_EFF	Index of effectiveness of legal powers of enforcement of the Regulator.
ENF	Aggregate index of legal powers of enforcement of the Regulator.
REGATTR_EXT	Index of extensiveness of legal rules on Regulator's attributes.
REGATTR_EFF	Index of effectiveness of legal rules on Regulator's attributes.
REGATTR	Aggregate index of legal rules on Regulator's attributes.
EXTCAP99	Aggregate index of extensiveness of capital market legal rules.
EFFCAP99	Aggregate index of effectiveness of capital market legal rules.
CAP99	Aggregate index of capital market legal rules.

Note: All legal indices are as of 1999. Sources: World Development Indicators 2003, World Bank; EBRD Transition Reports, various issues; Pistor (2000).

Table 3.25: Securities Market Variables by Country

Country	STOCK99	TURNOVER99	STOCK00	TURNOVER00
Albania	n.a.	n.a.	n.a.	n.a.
Armenia	1.3	4.6	1.3	n.a.
Azerbaijan	n.a.	5.9	0.1	n.a.
Belarus	n.a.	n.a.	n.a.	n.a.
Bulgaria	6.0	6.0	4.8	9.2
Croatia	13.8	2.7	14.5	7.4
Czech Republic	23.1	36.7	20.9	60.3
Estonia	37.1	24.1	34.4	18.9
FYR Macedonia	0.2	345.1	0.2	n.a.
Georgia	n.a.	n.a.	n.a.	n.a.
Hungary	35.7	95.8	25.8	90.7
Kazakhstan	16.5	1.2	7.5	2.0
Kyrgyzstan	0.3	8.6	0.3	n.a.
Latvia	6.3	11.9	8.0	48.6
Lithuania	10.7	26.2	14.2	14.8
Moldova	3.6	87.0	n.a.	n.a.
Poland	20.0	45.8	18.1	49.9
Romania	3.1	36.2	3.4	23.1
Russian Federation	44.4	5.9	15.3	36.9
Slovak Republic	3.8	59.7	3.9	129.8
Slovenia	11.9	32.4	13.7	20.7
Ukraine	4.6	14.8	6.0	19.6
Uzbekistan	0.9	21.7	1.0	n.a.

Sources: EBRD Transition Report 2003, World Development Indicators (WDI), 2003, IFC Emerging Stock Markets Factbook, Standard & Poor's – IFC Emerging Markets Database (EMDB), stock exchange websites.

Table 3.26: Economic and Dummy Variables by Country

Country	GDPPC99	AVINFL	VOUCHER	TRANSPLANT_ST
Albania	1040	14.8	n.a.	Unreceptive
Armenia	590	324.2	0	New
Azerbaijan	571	312.0	0	New
Belarus	1208	456.6	n.a.	New
Bulgaria	1582	175.2	0	Receptive
Croatia	4371	3.0	0	Receptive
Czech Republic	5332	7.6	1	Receptive
Estonia	3790	17.7	0	Receptive
FYR Macedonia	1837	11.0	0	Unreceptive
Georgia	524	1095.1	1	New
Hungary	4757	18.2	0	Receptive
Kazakhstan	1127	213.1	0	New
Kyrgyzstan	266	39.3	1	New
Latvia	2792	12.6	0	Receptive
Lithuania	3033	17.5	1	Receptive
Moldova	306	38.0	1	New
Poland	4011	16.9	0	Receptive
Romania	1585	65.5	0	Receptive
Russian Federation	1346	81.2	1	New
Slovak Republic	3651	8.4	0	Unreceptive
Slovenia	10098	10.1	0	Receptive
Ukraine	631	112.0	1	New
Uzbekistan	341	256.9	0	New

Sources: EBRD Transition Report 2003; Pistor (2000); Djankov, Claessens and Klingebiel (2000).

Table 3.27: Legal Indices of Disclosure and Market Intermediaries by Country

Country	DISCL_EXT	DISCL_EFF	DISCL	INTERM_EXT	INTERM_EFF	INTERM
Albania	82.87	59.72	71.30	71.60	9.85	37.64
Armenia	54.17	58.33	56.25	88.89	38.64	61.25
Azerbaijan	58.33	51.39	54.86	71.60	10.61	38.06
Belarus	54.17	75.00	64.58	85.19	16.67	47.50
Bulgaria	66.06	69.64	67.85	62.36	31.29	45.32
Croatia	81.52	70.14	75.83	78.70	26.55	50.02
Czech Republic	63.99	74.11	69.05	91.17	38.89	62.42
Estonia	93.85	85.71	89.78	78.31	43.51	59.17
FYR Macedonia	80.56	63.89	72.22	72.84	27.02	47.64
Georgia	73.61	45.83	59.72	37.04	19.95	27.64
Hungary	82.60	77.72	80.16	82.91	64.70	72.89
Kazakhstan	76.11	75.00	75.56	78.52	39.17	56.88
Kyrgyzstan	50.00	72.22	61.11	80.25	11.87	42.64
Latvia	71.53	68.75	70.14	78.70	43.56	59.38
Lithuania	63.43	77.78	70.60	72.84	44.19	57.08
Moldova	57.99	65.97	61.98	72.22	43.56	56.46
Poland	77.18	89.29	83.23	95.24	71.36	82.10
Romania	61.11	73.61	67.36	87.90	36.82	59.81
Russian Federation	63.55	73.97	68.76	85.76	50.18	66.19
Slovak Republic	85.19	78.01	81.60	95.99	39.92	65.15
Slovenia	87.50	83.33	85.42	80.25	58.08	68.06
Ukraine	50.69	61.46	56.08	75.36	43.29	57.72
Uzbekistan	59.72	70.83	65.28	48.77	10.35	27.64

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 3.

Table 3.28: Legal Indices of Regulator Attributes and Regulator's Enforcement Powers by Country

Country	ENF_EXT	ENF_EFF	ENF	REGATTR_EXT	REGATTR_EFF	REGATTR
Albania	62.50	22.92	46.67	100.00	66.67	93.33
Armenia	61.67	62.50	62.00	75.00	0.00	60.00
Azerbaijan	23.52	-5.56	11.89	63.89	100.00	71.11
Belarus	73.33	75.00	74.00	100.00	100.00	100.00
Bulgaria	69.81	44.86	59.83	100.00	86.67	97.33
Croatia	68.15	59.52	64.70	89.06	100.00	91.25
Czech Republic	77.05	62.92	71.40	98.86	83.33	95.76
Estonia	65.87	34.82	53.45	82.14	85.71	82.86
FYR Macedonia	63.15	42.36	54.83	100.00	100.00	100.00
Georgia	73.89	41.67	61.00	100.00	33.33	86.87
Hungary	82.95	77.88	80.92	97.44	91.67	96.28
Kazakhstan	44.33	40.42	42.77	95.00	100.00	96.00
Kyrgyzstan	73.33	23.61	53.44	88.89	100.00	91.11
Latvia	62.92	54.17	59.42	88.89	66.67	84.44
Lithuania	80.00	43.06	65.22	88.89	100.00	91.11
Moldova	64.58	29.17	50.42	93.75	75.00	90.00
Poland	78.10	81.25	79.36	96.43	100.00	97.14
Romania	75.78	79.17	77.13	83.33	80.00	82.67
Russian Federation	72.92	59.06	67.37	89.17	95.00	90.33
Slovak Republic	82.08	59.84	73.19	83.33	88.89	84.44
Slovenia	65.37	50.00	59.22	73.61	100.00	78.89
Ukraine	37.99	38.54	38.21	82.44	62.50	78.45
Uzbekistan	62.92	29.17	49.42	78.13	50.00	72.50

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 3.

Table 3.29: Aggregate Legal Indices of Securities Law, by Country

Country	EXTCAP99	EFFCAP99	CAP99
Albania	76.67	28.41	54.08
Armenia	71.80	46.59	60.00
Azerbaijan	55.64	22.85	40.30
Belarus	77.27	46.97	63.09
Bulgaria	71.06	46.78	59.70
Croatia	78.50	47.77	64.12
Czech Republic	82.49	54.89	69.57
Estonia	79.67	55.36	68.29
FYR Macedonia	76.71	43.18	61.02
Georgia	64.73	31.57	49.21
Hungary	85.17	71.87	78.95
Kazakhstan	72.37	51.93	62.80
Kyrgyzstan	72.71	34.47	54.81
Latvia	74.82	53.41	64.80
Lithuania	74.87	55.68	65.89
Moldova	70.42	48.48	60.15
Poland	86.98	79.35	83.41
Romania	77.83	56.52	67.85
Russian Federation	77.89	60.32	69.67
Slovak Republic	88.03	56.16	73.11
Slovenia	77.36	65.40	71.76
Ukraine	61.60	48.25	55.36
Uzbekistan	59.49	32.07	46.65

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 3.

Table 3.30: Question Scores on Securities Law: Questions Q2-Q13

Country	Q2	Q3	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Albania	1.00	1.00	1.00	0.67	0.61	0.13	0.88	1.00	0.88	0.21	0.75
Armenia	1.00	0.50	1.00	0.25	0.00	1.00	0.63	0.50	0.65	1.00	1.00
Azerbaijan	1.00	0.28	1.00	0.38	0.00	0.50	0.75	0.67	0.11	-0.11	0.50
Belarus	1.00	1.00	1.00	0.50	0.00	1.00	0.63	0.75	1.00	1.00	1.00
Bulgaria	1.00	1.00	0.93	0.64	0.21	0.63	0.84	0.82	0.76	0.62	1.00
Croatia	1.00	0.78	0.89	0.72	0.76	0.44	0.90	0.94	0.64	0.69	1.00
Czech Republic	1.00	0.98	0.92	0.60	0.07	0.77	0.92	0.85	0.85	0.88	1.00
Estonia	0.86	0.79	1.00	0.82	1.00	1.00	0.82	0.75	0.58	0.40	0.86
FYR Macedonia	1.00	1.00	0.67	0.50	1.00	0.67	0.75	0.75	0.49	0.22	1.00
Georgia	1.00	1.00	1.00	0.38	0.33	0.33	0.88	0.67	0.88	0.33	1.00
Hungary	1.00	0.95	1.00	0.71	0.71	0.81	0.77	0.81	0.93	1.00	1.00
Kazakhstan	1.00	0.90	1.00	0.65	0.33	0.60	0.95	1.00	0.53	0.46	0.60
Kyrgyzstan	1.00	0.78	1.00	0.50	-0.17	0.67	0.67	1.00	1.00	0.22	1.00
Latvia	1.00	0.78	1.00	0.63	0.21	0.75	0.94	0.69	0.79	0.71	0.75
Lithuania	1.00	0.78	1.00	0.75	-0.06	0.67	0.96	0.92	1.00	0.61	1.00
Moldova	1.00	0.88	0.71	0.42	0.25	0.63	0.78	0.94	0.79	0.17	0.75
Poland	1.00	0.93	1.00	0.86	0.57	1.00	0.74	0.82	1.00	1.00	1.00
Romania	0.83	0.83	1.00	0.63	-0.08	0.75	0.92	0.83	0.83	0.83	1.00
Russian Federation	0.95	0.83	1.00	0.61	0.03	0.73	0.87	0.88	0.90	0.89	0.85
Slovak Republic	1.00	0.67	0.89	0.75	0.78	0.78	0.89	0.81	0.96	0.76	1.00
Slovenia	1.00	0.47	1.00	1.00	0.67	0.83	0.96	0.67	0.49	0.67	1.00
Ukraine	0.83	0.76	0.60	0.41	0.19	0.75	0.73	0.69	0.69	0.58	0.38
Uzbekistan	1.00	0.56	0.71	0.63	0.21	0.50	0.88	1.00	0.74	0.46	0.75

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 3.

Table 3.31: Question Scores on Securities Law, Questions Q14-Q29b

Country	Q14	Q15	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q26	Q27	Q29b
Albania	0.25	0.25	0.39	0.00	-0.04	0.50	1.00	0.50	1.00	-0.08	0.00	0.50	0.33
Armenia	0.20	0.25	1.00	0.38	0.00	0.50	1.00	0.25	1.00	1.00	0.00	1.00	0.00
Azerbaijan	0.10	0.00	1.00	0.25	0.00	0.50	1.00	0.00	0.22	0.00	0.00	0.83	0.50
Belarus	0.20	0.50	1.00	0.25	-0.17	0.33	1.00	0.50	1.00	-0.17	0.00	1.00	0.50
Bulgaria	0.33	0.28	1.00	0.31	0.36	0.33	0.62	0.35	0.39	0.17	0.16	0.85	0.43
Croatia	0.40	0.50	0.83	0.44	0.23	0.54	0.73	0.50	1.00	-0.03	0.07	0.69	0.50
Czech Republic	0.46	0.38	1.00	0.44	0.36	0.77	1.00	0.60	0.83	0.08	0.21	0.95	0.42
Estonia	0.54	0.29	0.89	0.43	0.52	0.75	0.86	0.57	0.67	0.26	0.25	0.71	0.43
FYR Macedonia	0.40	0.63	1.00	0.38	-0.11	0.50	1.00	0.50	0.28	0.22	0.17	0.83	0.50
Georgia	0.33	0.50	1.00	0.38	0.67	0.33	-0.06	0.00	-0.11	-0.11	0.00	0.67	0.17
Hungary	0.55	0.56	1.00	0.46	0.83	0.54	1.00	0.71	0.73	0.71	0.42	0.88	0.46
Kazakhstan	0.20	0.35	1.00	0.50	0.53	0.50	0.77	0.56	0.77	-0.07	0.13	1.00	0.50
Kyrgyzstan	0.20	0.25	1.00	..	-0.08	0.50	1.00	0.38	0.61	-0.06	0.17	0.75	0.50
Latvia	0.35	0.38	1.00	0.44	0.46	0.63	1.00	0.44	0.42	0.13	0.44	1.00	0.33
Lithuania	0.40	0.25	1.00	0.33	0.61	0.11	0.67	0.38	1.00	0.61	0.00	1.00	0.50
Moldova	0.40	0.42	1.00	0.44	0.75	0.46	1.00	0.42	0.42	0.17	0.25	0.75	0.38
Poland	0.34	0.63	1.00	0.63	0.64	0.79	1.00	0.79	1.00	1.00	0.38	1.00	0.50
Romania	0.44	0.75	0.89	0.42	0.47	0.83	1.00	0.54	0.83	0.11	0.08	0.80	0.40
Russian Federation	0.44	0.29	0.98	0.46	0.90	0.74	0.89	0.45	0.78	0.25	0.22	0.95	0.48
Slovak Republic	0.50	0.44	1.00	0.38	0.41	0.94	1.00	0.66	0.88	0.19	0.13	0.94	0.44
Slovenia	0.47	0.33	1.00	0.50	1.00	0.50	1.00	0.50	0.61	0.28	0.42	1.00	0.50
Ukraine	0.08	0.19	0.91	0.46	0.73	0.55	0.88	0.41	0.56	0.19	0.16	0.94	0.31
Uzbekistan	0.40	0.13	0.83	0.38	0.00	0.04	0.21	0.00	0.61	-0.06	0.00	0.75	0.25

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 3. Note: ".." means that no answer was provided.

Appendix 3.B Securities Law Questionnaire

Q1. Have securities laws or regulations been enacted or amended in the past 8 years?

Y__ N __U__

A 'Yes' answer gets 1, a 'No' answer carries 0, 'Unclear' is penalised at -1/6.

Omitted from aggregation of indices.

Q2. Is there a government agency or an independent body ("Regulator") that regulates securities operations (e.g., a securities commission)? Y__ N __U__

A 'Yes' answer to part one carries 1, 'No' carries 0, 'Unclear' is worth -1/6.

Type of question: extensiveness

Q3. If yes, does the regulator have the ability to conduct on-site investigations and examinations of issuers?

Y__ N __U__

If yes, does it regulate the offering of the following types of securities to the public:

Shares? Y__ N __U__

Bonds? Y__ N __U__

A 'Yes' answer to part 1 carries 0.50, and 0.25 each to parts 2 and 3. A 'No' carries 0, 'Unclear' is worth -1/6. Maximum overall is 1.

Type of question: extensiveness

Q4. Are securities sold, marketed or traded to the public through mechanisms other than a securities exchange?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Omitted from aggregation of indices.

Q5. Are publicly listed (traded) companies required to provide timely and accurate disclosure of financial results and other information to the public (e.g., infor-

mation that is "material" to investor's decisions)? Y__ N __U__

A 'Yes' answer carries 1; a 'No' is worth 0; 'Unclear' is penalised at -1/6.

Type of question: extensiveness

Q6.If yes, how often is this information provided to the public?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q7. Must publicly-traded companies use international accounting standards when preparing their financial statements? Y__ N __U__

A 'Yes' answer carries 1; a 'No' is worth 0; 'Unclear' is penalised at -1/6.

Type of question: extensiveness

Q8. Is there a functioning clearance and settlement system for the following: (Please tick all that apply)

a) for shares?

b) for bonds?

Both options a) and b) carry 0.50 each; overall maximum is 1.

Type of question: effectiveness

Q9. Are companies required to file information with the Regulator prior to selling securities on the open market? Y__ N __U__

If yes, what type of information must be provided:

a) Less than contained in the annual report?

b) More than contained in the annual report?

In what form must the information be provided (please tick all that apply):

c) Prospectus/Listing Particulars

d) Financial Statements

e) Other (e.g. Notice to Shareholders)

A 'Yes' answer to part 1 of the question is worth 0.25; option a) carries 0, option b) gets 0.25; options c) gets 3/8, d) gets 1/8 and e) gets 0. The maximum overall is 1.

Type of question: extensiveness

Q10. If yes, does the Regulator review and approve any of the information filed by a company prior to a public offering?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q11. Does the regulator have enforcement powers? Y__ N __U__

If yes, do these enforcement powers include:

a) Authority to revoke an issuer's listing?

b) Authority to impose civil fines or penalties?

A 'Yes' answer to parts 1 gets 0.50; option a) is worth 0.15, option b) receives 0.35. A 'No' answer to part 1 is worth 0. 'Unclear' is penalised at -1/6. Maximum score is 1.

Type of question: extensiveness

Q12. Has the regulator (if any) undertaken any actual oversight or enforcement action under its regulatory powers within the past 5 years? Y__ N __U__

A 'Yes' answer gets 1, a 'No' answer is worth 0. 'Unclear' is penalised at -1/6. Maximum score is 1.

Type of question: effectiveness

Q13. Is insider dealing prohibited? Y__ N __

A 'Yes' answer to part 1 carries 1, a 'No' answer is worth 0.

Type of question: extensiveness

Q14. If yes, is it prohibited (please tick all that apply):

a) By legislative act?

b) By administrative rules or regulations?

c) By securities exchange rules?

d) By private law?

e) By criminal law?

Each option from a) to e) is worth 0.20. Maximum score is 1.

Type of question: extensiveness

Q15. How frequently does the Regulator use its enforcement powers if there is a problem of insider dealing or fraud?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q16. Is there (or are there) a functioning stock exchange(s) in your jurisdiction? Y__ N __U__

A 'Yes' answer gets 1, a 'No' answer carries 0, 'Unclear' is penalised at -1/6.

Omitted from aggregation of indices.

Q17. Do the capital markets or securities laws regulate the conduct of intermediaries such as brokers and dealers? Y__ N __U__

If yes, must brokers or dealers obtain a license? Y__ N __U__

If yes, are brokers required to have professional qualifications? Y__ N __U__

A 'Yes' answer to the first two parts gives 0.25; a positive answer to part 3 of the question gets 0.50. 'No' answer carry 0. Unclear' answers are penalised at -1/6. Maximum score is 1.

Type of question: extensiveness

Q18. Have any brokers had their licenses revoked by the Regulator or any other self-regulatory organisation?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q19. Are there self-regulatory organisations that have oversight responsibilities over market participants in specific sectors? Y___ N ___U___

A 'Yes' answer gets 1, a 'No' answer is worth 0. 'Unclear' is penalised at -1/6. Maximum score is 1.

Type of question: effectiveness

Q20. Are collective investment schemes (e.g., pension funds or mutual funds) authorised in your jurisdiction? Y___ N ___U___

If yes, what type are in existence (if any)

a) State-sponsored?

b) Private schemes?

c) Both private and state-owned?

A 'Yes' answer to part 1 gets 0.50, option b) is worth 0.50 too, options a) and c) get 0. The maximum score is 1.

Type of question: extensiveness

Q21. Are there separate rules and regulations for the licensing and regulation of investment funds or collective investment schemes? Y___ N ___U___

A 'Yes' answer gives 1, a 'No' answer is worth 0, 'Unclear' is penalised at -1/6.

Type of question: extensiveness

Q22. In practice, do collective investment schemes provide material and accurate information to members of the public?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q23. Are the issuers for collective investment schemes also required to disclose material information to the investor? Y__ N __U__

A 'Yes' answer gives 1. 'No' is worth zero, 'Unclear' is penalised at -1/6.

Type of question: extensiveness

Q24. Does an investor compensation scheme exist to protect investors in the event of a failure of a securities market intermediary (e.g. an investment firm)?

Y__ N __U__

A 'Yes' answer gives 1. 'No' is worth zero, 'Unclear' is penalised at -1/6.

Type of question: effectiveness

Q25. Have there been recent failures (in the past 3 years) of securities market intermediaries? Y__ N __U__

Omitted from aggregation of indices.

A 'No' answer gets 1, 'Yes' is worth zero, Unclear is penalised at -1/6.

Q26. If yes, have investors been able to receive compensation for their losses?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q27. Is there a legal basis for the provision of professional custodial services (e.g. shareholder depository)? Y__ N __

If yes, is such a system in operation? Y__ N __

A 'Yes' answer to both parts carries 0.50, a 'No' answer carries 0. Maximum score is 1.

Type of question: part1 extensiveness, part 2 effectiveness.

Q29b. Are there trained and knowledgeable staff in agencies that regulate:

Securities firms and intermediaries? Y__ N __

A positive answer carries 0.50, a negative answer is worth zero. Maximum overall is 0.50.

Type of question: effectiveness

Table 3.32: A Comparison of Securities Law Legal Indicator Survey Questions and Other Related Studies

LIS Qn No.	Belongs to	Question on	Relevance to	Black (2001)	La Porta et al. (2003)
Q2	Regulator Attributes	Independent Securities Regulator exists	extensiveness	honest, well-resourced Regulator	Part of Regulator Attributes sub-index
Q3	Regulator Attributes	Regulator authorized to conduct on-site examinations of issuers; regulates bond and share issues	extensiveness	does not cover	Investigative Powers sub-index; focused regulator
Q29b	Regulator Attributes	Regulator has professionally trained staff	effectiveness	core institution	does not cover
Q5	Disclosure Requirements	Publicly traded firms must disclose financial information in a timely manner	extensiveness	extensive financial disclosure	stresses importance
Q6	Disclosure Requirements	Frequency of information disclosure by companies in practice	effectiveness	does not cover	stresses importance

Q7	Disclosure Requirements	Publicly traded firms must use IAS to prepare financial statements	extensiveness	core institution	does not cover
Q8	Disclosure Requirements	Operational clearance and settlement system for trade in shares and bonds	effectiveness	stresses importance of market transparency of trades	does not cover
Q9a	Disclosure Requirements	Publicly traded firms must file information with Regulator prior to securities issue	extensiveness	stresses mandatory disclosure	covers specific disclosure requirements
Q9b	Disclosure Requirements	Mandatory filing of prospectus and financial statements	extensiveness	stresses importance	codes delivery of prospectus by promoters
Q10	Disclosure Requirements	Frequency of disclosure and regulatory approval prior to securities issue	effectiveness	does not cover	does not cover

Q11	Enforcement Powers of Regulator	Regulator enforcement powers, which include authority to revoke licenses and impose civil fines	extensiveness	does not cover	"Orders" sub-index, non-criminal sanctions
Q12	Enforcement Powers of Regulator	Regulator has used its enforcement powers	effectiveness	does not cover	"Orders" sub-index
Q13	Enforcement Powers of Regulator	Insider dealing prohibited	extensiveness	core institution	does not cover
Q14	Enforcement Powers of Regulator	Comprehensive ban on insider dealing through criminal and civil law	extensiveness	core institution; stresses criminal sanctions	stresses criminal sanctions in general
Q15	Enforcement Powers of Regulator	Frequency of Regulator's intervention in cases of insider dealing	effectiveness	core institution; stresses enforcement	does not cover
Q17	Regulation of Market Intermediaries	Securities laws regulate conduct of market intermediaries; mandatory licensing and standards	extensiveness	useful institution	does not cover

Q18	Regulation of Market Intermediaries	Frequency of intermediary licenses being revoked by Regulator	effectiveness	useful institution	does not cover
Q19	Regulation of Market Intermediaries	Intermediaries subject to mandatory self-regulation	effectiveness	useful institution	does not cover
Q20	Regulation of Market Intermediaries	Private investment and pension funds authorized	extensiveness	useful institution	does not cover
Q21	Regulation of Market Intermediaries	Separate rules for licensing of investment and pension funds	extensiveness	does not cover	does not cover
Q22	Regulation of Market Intermediaries	Frequency of information disclosure by investment and pension funds	effectiveness	does not cover	does not cover
Q23	Regulation of Market Intermediaries	Issuers of securities for investment and pension funds subject to disclosure	extensiveness	does not cover	does not cover
Q24	Regulation of Market Intermediaries	Investor compensation scheme exists	effectiveness	does not cover	stresses importance
Q25	Regulation of Market Intermediaries	Number of market intermediary failures	outcome	does not cover	does not cover

Q26	Regulation of Market Intermediaries	Frequency of investor compensation for losses due to intermediary failure	effectiveness	does not cover	stresses importance
Q27a	Regulation of Market Intermediaries	Law provides for shareholder depository	extensiveness	useful institution for market transparency	does not cover
Q27b	Regulation of Market Intermediaries	Shareholder depository in operation	effectiveness	useful institution	does not cover

Chapter 4

Banking Law and Private Credit in Transition Economies

4.1 Introduction

Many of the crises that have gripped the transition economies of Central and Eastern Europe and the former Soviet Union are financial in nature, e.g. failing banks, pyramid deposit schemes, collapsing investment funds. They encompass lack of investor protection and instances of sheer fraudulence. Economists and legal scholars argue that good investor protection laws and their adequate enforcement are essential for sound finance. Consequently, legal reform has occupied an integral part of political transition in Eastern Europe and governments across the region have been delegated the laborious task of enacting new legal rules, supportive of a market economy.

Recent empirical work on law and finance, and regulation and finance has addressed the role of banking regulation and supervision for bank development, e.g. Barth, Caprio and Levine (2004). The main purpose of this chapter is to establish whether specific banking laws and regulations play a role for the availability of finance to investors in transition economies. In particular, our objective is to look at

disaggregated indices of bank law and regulation – constructed from answers to the Banking Law section of the European Bank for Reconstruction and Development (EBRD) Legal Indicator Survey (LIS)– and to examine the impact of individual aspects of banking laws and bank regulation and supervision on bank development in the sample of transition economies.

As outlined in the previous chapter, external finance has generally been very tight in transition economies over the past ten years. Thus, compared to other countries with similar levels of per capita GDP, the transition economies have much lower ratios of private credit to GDP. Several explanations of this outcome have been put forward in the literature on corporate finance in transition. According to one of them bank lending to state-owned enterprises crowds out lending to the private sector.[1] In line with this view, for example, functioning banks and stock markets were virtually non-existent at the outset of reforms in the early 1990s. At that time liberalization of financial services and privatization gave rise to over-abundance of banks in most of these countries. However, many of these banks continued to openly or covertly finance their old clients - debt-ridden state-owned enterprises. In many countries this process continued well into the mid- to late 1990s, and was marked by bank failures and bank crises – examples are Bulgaria in late 1996, Croatia in 1997, Russia in 1998.

A second explanation for the low levels of private bank credit is the outstanding stock of bad loans on banks' balance sheets. The problem of bad loans, accumulated from the past, was largely resolved at the beginning of transition, when many of these loans were written off bank balance sheets or replaced by long-term government bonds, or inflation depreciation kicked in. Despite these measures, bank credit remained generally tight, and enterprises had to resort to other forms of financing, notably through accumulation of wage, tax and payment arrears and increased use of

[1]Perotti (1993) builds a model of bank lending, which explains this type of behaviour.

barter and trade credit. Even to this date, the bias towards lending to state-owned enterprises, or for politically-motivated reasons is substantial in many transition economies.

Thirdly, weaknesses in corporate governance and banking supervision create ample opportunities for asset-stripping both in the banking and corporate sector in transition, and thus necessitate a review of the legal and financial interactions in transition. Despite the growth of private firms in these countries, external finance has been largely unavailable, as documented in Pistor, Raiser and Gelfer (2000).

Fourth, the reasons for lack of external finance to private enterprises have been linked with the method of privatization. The corporate sector in these countries has undergone dramatic changes during the transition period. But the very nature of privatization has proved an obstacle to bank lending. Privatization of state enterprises has been constrained by insiders, who had assumed effective control in the years immediately preceding and following the collapse of Communism. Powerful entrenched managers have thus made external investors wary, and finance has been scarce. This in itself reinforces the bad equilibrium of no restructuring and asset stripping. Thus, bank finance as well as stock market development are linked to the patterns of corporate ownership and control, which have emerged as a result of privatization. In a quantitative survey of the literature on enterprise restructuring in transition, Djankov and Murrell (2002) discuss both corporate and bank ownership issues and institutional factors. For example, they summarize one of the findings of the literature: weak corporate governance results in higher ownership concentration, which in turn limits the sources of external financing. Also, they quote evidence that state ownership of banks in transition is the critical factor for persisting soft budget constraints.

Obviously, the interest in banking law and bank development in the transition economies is also generated by a series of banking crises that have gripped almost

all of them in recent years. Albania, Bulgaria, Croatia, the Czech Republic, and Russia all had their share of banking troubles. Perotti and Sgard (2001) present an interesting overview of the mechanics of the Russian crisis in the summer of 1998. Their study stresses that the Russian financial meltdown was the result of perverse individual incentives built on a system of weak legal enforcement. The overwhelming incentive to strip cash out of old and new Russian banks and firms led to a high outflow of capital, and the banks were both a major channel and a leveraging tool which fed the flow. So contrary to the belief that the crisis was triggered by the government default and devaluation due to inability to raise tax revenues, the main reason for the banking collapse is thought to be the system of perverse, albeit rational, incentives to strip cash and send it abroad. The latter was generated by the failure of the Russian institutional environment: poor enforcement of laws and a lack of protection of property rights. If property rights are not protected, rational agents adopt short-term strategies: ignoring payment obligations, appropriating any cash and immediately transferring it abroad. Perotti and Sgard (2001) argue that both the banks and the government debt market in Russia before the crisis turned into two pyramids, leaking any assets out as capital flight, and leaving behind liabilities and empty boxes. To a large extent, the unrestricted power of bank and firm managers and the size of related party lending are thought to have caused the ultimate collapse.

Our main purpose in this chapter is to define meaningful indices of banking law extensiveness and enforcement, and to investigate their role for different measures of bank development such as the share of domestic banks' credit to the private sector, liquid liabilities of domestic banks, and the share of foreign banks in the domestic banking system. We use relevant data for 1999 and thereafter, and our legal variables are based on the 1999 edition of the EBRD Legal Indicator Survey. The rest of the chapter is organized as follows: section 4.2 presents the related literature, section

4.3 describes the data used in the analysis; section 4.4 presents the methodology; section 4.5 shows the main regression results, section 4.6 displays some robustness checks, and section 4.7 concludes.

4.2 Related Literature

We have already introduced some of the related literature on banking law, regulation and bank development in earlier chapters. Here we provide a review of the related work in two areas: 1) the law, finance and institutional aspects of financial development, which we call the "law and finance" branch for short; and 2) the growing literature on banking in transition, which focuses on one or a few countries. In these two areas we consider both theoretical work, and empirical studies. We also consider work both pertaining to transition, and to other economies in general.

4.2.1 Law, Institutions and Finance

There is a burgeoning literature about the interactions between the legal system, institutions and the financial system, as well as the interaction between financial development and economic growth, and how legal, cultural and institutional factors affect finance and growth. A lot of this literature has been spurred by the papers by La Porta et al. (1997) and (1998), as well as by subsequent contributions by these authors. One of the findings of the La Porta et al. (1997) and (1998) papers is that legal origin – that is, the belonging of a country to a certain legal tradition – affects current financial development, and that the legal rights of shareholders and creditors according to the commercial/company laws of a country determine – at least up to a point – how developed equity and credit markets are today.

4.2.1.1 Legal Origin, Endowments or Politics

The La Porta et al. (1997) and (1998) papers took legal origin as exogenous, and hence useful as a measure of current financial development. Some of the recent work in this field has attempted to answer why legal origin matters, and whether alternative theories can provide a better explanation for observed variation in financial market development across countries and across time. Beck, Demirguc-Kunt and Levine (2003b), for example, examine two different channels, through which legal origin may affect financial development – the so-called "political channel" on the one hand, and the "legal adaptability channel" on the other. The political channel argues that the English common law essentially developed to protect private landowners and their property from the Crown, while French and German civil law sought to solidify state power by placing the King above the law. In contrast, the legal adaptability theory claims that common law is better suited to adapting to changing contractual and economic needs, mainly through the role of common-law judges interpreting the law and responding to changing transactional needs. This process of judicial powers of interpretation in the application of case law allows for efficient legal rules to get adopted with time. In contrast, in France the judges apply the written law and are not endowed with the powers of interpretation of the law that common-law judges have. Therefore, the proponents of the legal adaptability theory argue that observed differences between the English common law and French civil law traditions are linked to the way the law adapts to the needs of the economy. Beck et al. (2003b) analyse empirically the role of these two channels – the power of the state versus the process of law-making and application – for explaining current financial development in a cross-section of up to 115 countries (the sample size is cut almost in half in some regressions due to data limitations). Using a cross-sectional instrumental variables estimation, the study finds evidence that legal origin affects financial development (private credit, stock market development and

property rights) through the adaptability channel (measured by the use of case law as a source of law, and need for legal justification of court decisions from Djankov et al. (2003a)). The political channel, measured by the tenure of Supreme Court judges and the powers of the Supreme Court, is not significantly associated with financial development measures. Legal origin dummies – which instrument for both the political and legal adaptability variables – are found to have an independent effect on financial development.

A related paper by the same authors, Beck et al. (2003a), looks at cross-country data on 70 former colonies and assesses whether financial development in these countries today is explained better by legal origin, brought by the colonizers, or by the geographical and disease environment encountered by the first European settlers. The second view is called "the endowment theory of development", as explained by Acemoglu, Johnson and Robinson (2001). The endowment view is that initial European settler mortality affected the type of institutions that colonizers built in the colonized lands – in harsh environments, where settler mortality was high, extractive institutions developed; in colonies where settler mortality was relatively low and comparable to European mortality at the time, colonization policy was to establish long-lasting and better institutions. Acemoglu et al. (2001) produce evidence that settler mortality actually explains cross-country variation in economic and financial development, and the quality of current institutions. To assess whether legal origins or endowments affect financial development, Beck et al. (2003a) employ cross-country regressions of private credit, stock market development and property rights (averaged over the period 1990-1995), and test for the impact of legal origin and endowments (as proxied by settler mortality). They find that high settler mortality is negatively associated with current financial development and the results are robust to controlling for additional variables. They also find that legal origins also explain financial development, but these results are generally not robust to alter-

native specifications and controls. Finally, they establish that endowments explain a higher amount of the cross-country variation in financial development than legal origin does. The results suggest that endowments have an edge over legal origin in explaining financial development.

4.2.1.2 Law, Finance and Growth

There is a substantial theoretical and empirical literature on the linkages between financial development and economic growth. Levine (1997) provides a survey of the literature and reviews how the different functions of the financial system affect capital accumulation and technological innovation, and through them – economic growth. The empirical strand of the literature on the linkages between finance and growth is concerned with the impact of the legal system and shareholder and creditor protection through the laws on finance, and how financial systems affect growth and the ability of firms to raise external finance. Some of the methodologies employed utilise standard cross-country regressions, using data averaged over a number of decades to assess the effect on long-run growth. For instance, Levine and Zervos (1998) study the impact of stock market performance and banking development on growth, capital accumulation and productivity growth in 47 countries from 1976 through 1993. They find that both stock market liquidity and bank credit to the private sector are positively and significantly associated with contemporaneous and future rates of economic growth, capital accumulation and productivity growth. These results are found robust to controlling for a number of variables. However, since they use standard cross-sectional regressions, the results may be subject to biases due to country-specific effects. Another limitation of the approach is the potential simultaneity of financial development and growth. Subsequent papers have addressed these concerns. Beck, Levine and Loayza (2000) further explore the linkages between banking development and growth, and address some of the

limitations of earlier studies. Thus, they employ two methodologies to confront simultaneity and omitted variable biases in the Levine and Zervos (1998) paper. One methodology is to estimate cross-country regressions through instrumental variables techniques, which should correct for potential endogeneity between financial development and economic growth (legal origin dummies are used as instruments). A second approach is to employ dynamic panel estimation techniques, which exploit the time series dimension of the data, and account for unobserved country-specific effects. Such methods also control for potential endogeneity by using instrumental variables based on earlier realizations of the explanatory variables. The results from both methods indicate that financial intermediary development (measured in several ways, including bank credit to private sector, bank and non-bank credit to the private sector, and liquid liabilities) is positively and significantly associated with both real per capita GDP growth and productivity growth. The results for the effect of financial intermediary development on capital accumulation and private savings rates are found less robust, and therefore less conclusive. The upshot of the paper is that the data support the theory that better financial intermediation improves allocation of resources and affects growth through changes in total factor productivity growth. A similar study by the same group of authors – Levine, Loayza, and Beck (2000) – precedes and corroborates the findings of Beck et al. (2000), using the same techniques on data from 1960 through 1995 in 74 countries. It again examines the relationship between financial intermediary development and economic growth, but does not explore the channels through which financial intermediation affects growth. In addition, however, it also establishes that legal rights of secured creditors, the proper enforcement of contracts, and accounting standards which produce comprehensive, high-quality and comparable financial statements, are all significantly associated with better financial intermediary development. The authors note that one also ought to look at financial intermediary regulation in as-

sessing its development across countries, but due to data limitations they leave this task to future research.

Rajan and Zingales (1998) explore the financial dependence of growth. While they allow for possible reverse causality in the sense that growing economies are likely to generate more financial innovation and thus more efficient financial markets, the main argument is that financial sector development reduces the costs of raising external finance to financially dependent firms and thus enhances growth. The authors also test empirically whether financial market imperfections affect investment and growth. In a different paper, Rajan and Zingales (1995) look at capital structure of firms across countries and establish that tax codes, bankruptcy laws, state of development of bond markets and patterns of ownership matter for firms' leverage. Thus, for example, strict enforcement of creditor rights enhances ex-ante contractibility and commits creditors to penalise management, if the firm gets into trouble. They find supportive evidence that the concentration of ownership in Continental European and Japanese firms and the diffused ownership and active takeover market in the U.K. and the U.S. (and Canada to a certain degree) are partly determined by existing commercial law norms (bankruptcy law in their study). Demirguc-Kunt and Maksimovic (1998) are also linking law and finance to growth. They ask how differences in legal and financial systems affect firms' use of external finance to fund growth. They find that higher efficiency of the legal system leads to a higher proportion of firms using long-term external finance. Also an active stock market and a large banking sector are correlated with externally financed growth. The latter is supposed to be essential for small and medium-sized enterprises.

Some studies also try to identify whether the balance of financial institutions – bank-based or market-based – affects economic growth. For instance, Beck and Levine (2004) examine the joint impact of stock market development (measured by

the turnover ratio) and bank development (measured by private credit) on economic growth, using panel data from 1976 through 1998 in 40 countries. Using different versions of the generalized-method-of-moments (GMM) estimator, they establish that stock market development and bank development are jointly significant in determining economic growth. These findings, however, require qualification since in some of the estimations either bank credit or stock market turnover are not found individually significant. Furthermore, using the panel estimator with annual data rather than data averaged over five-year periods, they find no individual significant relationship between private credit and economic growth. Given these uncertainties, the paper's findings are suggestive rather than conclusive.

Some of the contributions to the law, finance and growth strand of research have focused on firm-level data on access to finance. A recent study by Carlin and Meyer (2003) examines the role of institutional features of developed OECD economies for firm growth, investment in fixed capital, and investment in research and development (R&D) in 27 industries over the period 1970-1995. Specifically, the authors look at the interaction of country characteristics such as the quality of accounting standards, bank concentration, and corporate ownership concentration, and industry characteristics – such as industry equity dependence, bank dependence and skill dependence – and their effect on industry growth, fixed investment and R&D investment. Since there are no time series data on the independent variables, cross-sectional estimations are undertaken, using averaged data on the three dependent variables over the sample period, and robustness checks are run using averaged data over sub-periods. To control for endogeneity of the country structures, instrumental variables estimations are employed, using legal origin, rule of law and population as instruments for the level of accounting standards, banking system concentration and the concentration of ownership in non-financial private firms. The results indicate significance of the interacted country and industry char-

acteristics in the growth regressions. Better accounting standards, for example, are associated with higher growth in equity- and skill-dependent industries. Higher firm ownership concentration is also significantly associated with higher growth in equity and skill-dependent industries. Finally, higher bank ownership concentration is significantly associated with lower growth in equity-dependent industries. The results on the R&D regressions generally confirm the growth results; however, none of the country and industry variables are found significant for the fixed investment regressions. The authors interpret these results as supportive of the information and renegotiation theories of finance. Thus, equity-dependent industries are shown to have higher growth in countries with better accounting standards and less concentrated banking system. Institutional structures and industry growth are more closely associated with investment in R&D than investment in fixed capital. Finally, in low-income OECD countries, there is a positive association between bank concentration and bank-dependent industry growth. Corporate governance theories – i.e. that concentrated ownership is associated with internally funded firm activities – are not supported by the data. Growth in equity and skill-dependent industries was found higher in countries with concentrated rather than dispersed ownership. In summary, the study indicates that financial system structure and institutional factors, such as information disclosure, coupled with industry characteristics, explain the types of activities undertaken by firms in industrial economies.

4.2.2 Banking in Transition

A growing number of papers are devoted to banking developments in the transition economies since the beginning of transition. Many of the early studies were naturally concerned with economic policy toward banking in the early years of reform. In particular, the leading questions of the day were how to ensure that banks and financial markets in general undergo the necessary transformation from a socialist monobank

system, with no competition or market for credit risk, to a system which assumes the basic functions of market finance – allocation of credit to its most productive uses, assessment of credit risk, monitoring and governance of debtors, and provision of payment services. The focus of these early studies was duly on potential methods for bank restructuring, strengthening and privatization. A strong emphasis was also placed on maintaining financial stability and preventing system-wide bank failures – an understandable concern, given the high volume of bad debts inherited from the socialist past, and the substantial monetary overhang in the early transition years, which fuelled inflation and led to financial disintermediation. For instance, Thorne (1993) provides one of the early summaries of transition banking and the strategies for reform. A common feature of some of this early work is the lack of any cross-country regression analysis due to short time series data; in addition, the early stages of transition did not allow for a reasonably long time-span to assess reforms and how they worked. Moreover, the financial transition in many of the formerly socialist countries was yet to begin. Thorne (1993) reviews three of the more advanced transition countries: the former Czechoslovakia, Hungary, Poland, as well as Romania and Bulgaria as of 1991-1992, and assesses steps made in each of these five countries to reform the banking systems inherited from the past. He conducts a historical comparison of the pre-transition experience of these countries, highlighting that both Poland and Hungary had already established a two-tier banking system in the late 1980s, and had opened up their banking markets by allowing bank managers a greater role in credit allocation. Nevertheless, all five countries had common problems at the outset of transition: a large proportion of non-performing loans mainly to state-owned enterprises form the previous regime; an inefficient payment system; a lack of legal, regulatory and supervisory framework suited to the needs of a market economy; a lack of bank managerial skill and experience in credit risk evaluation; and large state enterprises owning banks, causing inadequate bank gov-

ernance and interfering with bank lending decisions. The paper also examines the early banking legislation and some of its main provisions such as what type of banking activities were permitted by the five countries' banking laws (as of late 1991-early 1992) and whether universal banking was allowed, or not; whether laws introduced limits of bank exposure to a single borrower, and on lending to bank shareholders; rules on minimum capital requirements and meeting international capital adequacy standards; provisions on deposit insurance, etc. The study also outlined the role of other supportive laws such as effective bankruptcy laws to address the problem of financially weak corporate borrowers, and the crucial role of bank supervision in enforcing and applying the banking law. Importantly, the author recognises the need for effective supervision defined as supervisory ability to conduct both on-site and off-site examinations of banks as a means of restoring the public's trust in the banking system. In this regard, his paper strikes a good parallel with our study.

More recent work addresses issues of bank performance and efficiency towards the end of the 1990s, and investigates how bank restructuring, privatization and consolidation of the early 1990s have affected subsequent bank performance and bank intermediation as well as the structure and concentration of national banking markets. Many studies deal with foreign bank entry, which has been a distinctive feature of banking privatization and reform in the advanced transition countries. This body of work features both individual country case studies (e.g. Bonin and Abel (2000), Szapary (2002) and Hasan and Marton (2003) on Hungary; Bonin and Leven (2001) on Poland; Amaghlobeli, Farrell and Nielsen (2003) on Georgia; Weill (2003) on Poland and the Czech Republic; Perotti (2002) on Russia; Kraft and Tirtiroglu (1998), Jemric and Vujcic (2002) and Kraft and Jankov (2003) on Croatia; Kloc (2002) on Ukraine, Georgia and Kyrgyzstan), and cross-country analyses, using both country-level and bank-level data. For example, Fries, Neven and Seabright (2002) use a sample of 515 banks in 16 transition economies over the years 1994-

1999, and estimate cost and revenue functions, using Bankscope bank balance sheet data and employing panel data estimation techniques. They find that progress in banking sector reform – as measured by the EBRD index of progress in liberalization and institutional reform of the banking sector (on a scale of 1 to 4+) – affects bank performance. Specifically, dividing the countries into two groups – low and high-reform countries – produces different results for bank performance outcomes. The results indicate that in high-reform countries banks are earning comfortable profit margins on their loans and also offering competitive interest rates to their depositors. Their return on equity, however, is still negative. In contrast, banks in low-reform countries are earning high negative returns on their loans, mainly at the expense of their depositors. They have been appropriating the inflation tax on deposits and have been using it to sustain their weak loan portfolios. The return on equity is found insignificantly different from zero. In addition, net interest margins are found to be falling over time everywhere, and to be systematically lower in the high-reform countries – indicating higher competition. The authors conclude that since such divides between the two country groups are observed, and since intermediation levels are still low by developed-country standards even in the high-reform countries, more attention should be given to establishing an appropriate bank regulatory framework and policy toward the banking industry.

A lot of the recent literature has focused on the impact of foreign ownership on bank performance. Thus, Bonin, Hasan and Wachtel (2003) investigate the impact of foreign bank ownership on bank performance and efficiency over the period 1996-2000 in eleven advanced transition economies. At the end of the 1990s eight of these countries had a banking industry where more than half of bank assets were in banks with majority foreign ownership. Among the remaining three – Slovakia and Romania had foreign ownership close to 50% , and only Slovenia remained with a low level of foreign-owned banks – estimated at 15.6% of bank assets in 2000. The

authors use an unbalanced panel dataset of 220 banks from these eleven countries, and distinguish between several types of bank ownership – government ownership, foreign ownership, domestic private ownership and international institutional investor ownership (for those banks where the EBRD or the International Finance Corporation (IFC) have an ownership stake). They utilise the stochastic frontier analysis approach to estimate bank cost and profit efficiency scores, and use these scores alongside the return on bank assets as the dependent variables in panel regression estimations on ownership dummies and a set of control variables such as year effects and bank size. Country effects are also included in the regression for the so-called relative efficiency scores – i.e. the efficiency of banks relative to all other banks in the same country. The results indicate that bank size reduces bank efficiency significantly, therefore larger banks are found less efficient. The year effects are estimated to be negative and generally significant for the years after 1996 in the return on assets regressions, thereby lending support to the view that after 1996 banks have been exposed to more competition, lowering the return on assets. The efficiency score regressions indicate that efficiency – both profit and cost – has improved significantly since 1998, which is when foreign participation in banking increased dramatically in many of these countries. Accordingly, the results indicate that foreign-owned banks have significantly higher efficiency scores compared to private banks in their own countries. Some of these results, are however not robust to using different efficiency measures – for example, when using raw efficiency scores as opposed to relative efficiency scores. The results strongly suggest that government ownership is associated with less efficient banks – and these regression results are less sensitive to the dependent variable being used. Finally, the additional impact (beyond that of having a foreign owner) of having an international institution as a shareholder (in all cases these are foreign-owned banks) is found to be positive, significant and large on the return on assets and profit efficiency, but insignificant

on cost efficiency. This led the authors to conclude that international institutional investors are more interested in "cherry-picking" the best banks rather than in facilitating the transfer of new technology, know-how or superior banking practices.

A related paper by Bonin, Hasan and Wachtel (2003) examines the role of bank privatization in improving bank performance in the transition economies. Employing data in six transition economies in which large state-owned banks were privatized, usually to strategic foreign owners, they find that bank privatization to foreign owners has had a significant positive impact on the financial performance of these banks. Privatized banks are found to be collecting more deposits and making more loans relative to their assets than they were before the privatization. Loan-loss provisioning is much lower post-privatization, indicating government policies aimed at clean-up of bank balance sheets and recapitalization prior to their privatization. Moreover, privatized banks are found to be earning significantly higher levels of commission income than both state-owned banks and foreign greenfield banks, indicating that privatized banks are adopting changes in their business strategies and seeking out new market niches. One notable drawback, however, is the finding that banks privatized to strategic foreign investors do not appear to be increasing their lending, so the level of financial intermediation remains about the same as before privatization. This is a valid concern, particularly in view of the fact that most of these banks collect a substantial proportion of deposits in their countries. It is worth noting that these cross-country bank-level panel studies are beginning to emerge now, and new evidence will be available in the future on the bank reforms undertaken by the more advanced group of transition economies in the mid- to late 1990s.

Among the individual country banking efficiency studies, a recent paper by Weill (2003) examines the role of foreign ownership for bank efficiency in the Czech Republic and Poland. Using the stochastic frontier approach to compute bank efficiency scores, the results indicate that foreign bank ownership is significantly associated

with higher cost efficiency scores, controlling for other factors. The author contrasts this finding to general findings in the related literature on foreign banking in developed economies, where foreign banks are found to be less efficient than domestic ones. He conjectures that the observed advantages of foreign banks in transition economies are due to benefits from transfer of banking know-how, and better governance exercised by foreign shareholders. Similarly, Hasan and Barton (2003) apply the same methodology in assessing the role of foreign-owned banks in Hungary. They provide a useful account of the Hungarian banking system development in the early 1990s, specifically paying attention to institutional features such as the restrictions on foreign bank ownership imposed by the banking law before 1996. These restrictions on share ownership were removed in the amended Banking Law of 1996, when foreign participation was actively encouraged in the privatization of the state-owned banks. Computing profit and cost efficiency scores and conducting pooled OLS estimations reveal that foreign banks outperformed their domestic counterparts, and that their involvement in local banks has also improved the efficiency of those Hungarian banks (Bonin and Abel (2000) report a similar finding). Higher foreign shares were found to be associated with lower inefficiency. Therefore, their study echoes other findings in the literature on the effects of foreign bank ownership in transition that we mentioned above.

In general, while the early transition literature on banking focused primarily on the state and strategies for consolidation and privatization of banks, and offered limited data analysis, the more recent literature has begun to utilise the accumulated time series data since the mid-1990s and to offer dynamic panel data estimations, using bank financial accounts. Most of the recent work has focused on the effects of bank privatization and of bringing in foreign bank owners – a natural outcome given the high degree of foreign bank ownership attained at the end of the 1990s in the group of advanced transition economies. The general findings of this literature

point to the positive effects of foreign ownership and private ownership on different bank efficiency measures.

4.3 Data

4.3.1 Banking Law Variables: Cross-Country Comparisons

We presented in detail the rationale for the Banking Law LIS questions and their aggregation and weights in Chapter 2. Here we summarise and illustrate how the main thematic banking legal indices compare to alternative measures, and how the countries rank.

4.3.1.1 Supervisory Independence

Among the surveyed LIS countries in 1999, Georgia ranks a surprising top country on supervisory independence (see Figure 4.1). This is based on one survey answer[2], which claims that there is an independent banking regulator. The next three highest-ranking countries on supervisory independence from the LIS are Latvia (0.88), Poland (0.85) and Hungary (0.83). The bottom three are Albania (0.44), Uzbekistan (0.44) and Armenia (0.25). In Latvia, for instance, the 0.88 score is the average of four answers, 3 of which indicate that banks are regulated and supervised, and the regulator is a separate body with at least some political independence. One answer confirms that there is a separate regulator, but asserts that the latter has no political independence.

According to the Barth et al. (2001) database, the Bank of Latvia's Credit

[2]A second survey answer, which had been counted before the cleaning of the data, has almost entirely missing answers for the Banking Law section of the survey and is therefore excluded. A third questionnaire has no answers to the Banking Law section at all, and had already been excluded from the index aggregation previously.

Institutions Supervision Department is the bank supervision authority. However, no information is reported about its independence within the government, or from banks and other parties. Therefore, a comparison between the Barth et al. (2001) and our sub-indices of regulatory independence is not possible.

In the case of the LIS score for Hungary, the value of 0.83 is the average of 13 answers, 9 of which specify that the regulator is a separate body with at least some political independence. Three answers assert that the Regulator is a separate body with no political independence, and 1 answer claims that the Regulator is the Minister of Finance.

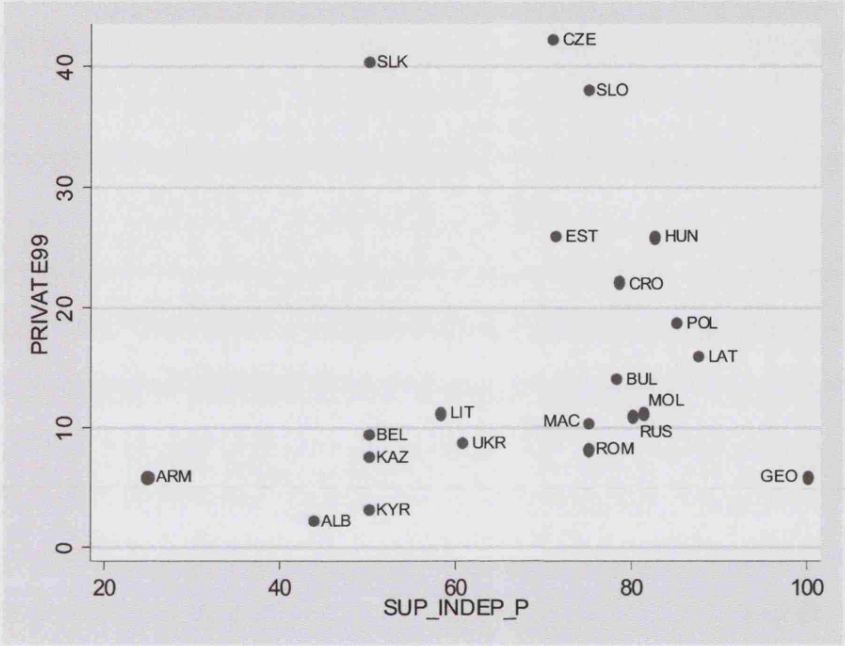
The Barth et al. (2001) score for overall supervisory independence is 2, 1 for independence within the government and 1 for independence from banks. Political independence is considered to be low since bank supervisors are accountable to the Ministry of Finance; the head of the supervisory authority is appointed by the Prime Minister upon the joint recommendation of the Minister of Finance and the President of the Hungarian National Bank, and is removed from his post by the Prime Minister. Therefore, the executive branch of government had a strong say in matters of bank supervision as of 1999, hence the low score for within-government independence. Since bank supervisors are not liable for their actions before the courts, the sub-index for independence from banks is 1. The regulator is the State Banking and Capital Market Supervision department of the Central Bank of Hungary, as confirmed by the Barth et al. (2001) dataset. Twelve of the thirteen LIS answers suggest that there is a separate regulator, as is the case. One answer suggests the regulator is the Minister of Finance, probably due to the strong say of the latter, as evidenced by the Barth et al. (2001) data, on monitoring the activity of the supervisory authority and selecting its leadership.

For the 11 countries, which have both LIS and Barth et al. (2001) scores, we find that the Barth sub-index of overall supervisory independence is negatively correlated

with the LIS index of independence (correlation coefficient of -0.26). For example, the fifth- and sixth-ranked countries in the LIS are Moldova (0.81) and Russia (0.80), but both score only 1 (low independence) on within-government independence of the supervisory authority. In Russia the Regulator is the Central Bank of the Russian Federation. Fourteen of the twenty LIS respondents say that a separate body with some political independence is responsible for bank regulation. Only two respondents say that a separate body exists, but it is not endowed with political independence, while four think that the regulator is the Minister of Finance. The low score for within-government independence by Barth et al. is due to the fact that the country's President nominates the head of the supervisory authority, who is then approved by the State Duma (Parliament), and is also dismissed from his post by the President. Bank regulators are accountable to Parliament. In the case of Moldova there are four LIS responses, 3 of which claim that there is a separate regulator, which has at least some political independence. One respondent thinks that the bank regulator is the Minister of Finance. According to the Barth et al. (2001) database, there is a separate body responsible for bank regulation and supervision: namely, the Banking Supervision and Relations Department of the National Bank of Moldova. The supervisors are accountable to the Council of Administration of the National Bank. The head of the supervision department is appointed and removed by a respective order of the Governor (of the National Bank) in accordance with the provisions of the Labor Code. Since accountability and appointment/removal of the head and directors of the supervision department are not directly determined by political institutions (such as the executive branch), it is not clear what motivates the low score of within-government independence.[3]

[3]Author's correspondence with James Barth, Jerry Caprio and Ross Levine led to the following explanation: Essentially two factors determined the BCL index of supervisory independence – how the head of supervision was appointed, and how he or she was removed. The closer the situation was to that in which one person could remove the head of supervision with no oversight

Figure 4.1: Private Credit in 1999 and Supervisory Independence



According to the Barth et al. (2001) data, the three top-ranking countries in terms of supervisory independence from the government with a score of 3 are Slovenia, Poland and Belarus. Both Slovenia and Poland have high LIS scores (0.75 and 0.85 respectively) on independence of the supervisory authority. However, Belarus is among the group of low-ranking LIS countries. Its score of 0.50 is based on one survey response, which claims that a separate body is responsible for supervision and regulation of banks and other financial institutions, but that it has no political

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or accountability, the lower the ranking. Accordingly, the low ranking for Moldova is motivated on grounds that the Governor of the Central Bank could remove the head of bank supervision without the protection of the law – they mention that it is only a Code and not a law that offers protection in this case, and conjecture that unlike a law, a code may not allow for courts to arbitrate whether it had been followed. However, this distinction between a code and a law is purely semantic, and in my opinion probably a code and a law have the same status and meaning. In fact, the two words are often used interchangeably by foreign, non-English-speaking legal experts.

independence. The Barth et al. data confirm that a separate regulator is in existence, i.e. the National Bank of Belarus. The data reveal that bank supervisors are accountable to the President of Belarus; and that the head of the supervisory authority is appointed by the President with the consent of the Council of the Republic, and removed again by the President on grounds stipulated by law and with notification of the Council of the Republic. Given the high degree of dependence on the executive authority of the President, it is extremely puzzling why this country gains the maximum score for supervisory independence within the government in the Barth et al. (2001) database.[4]

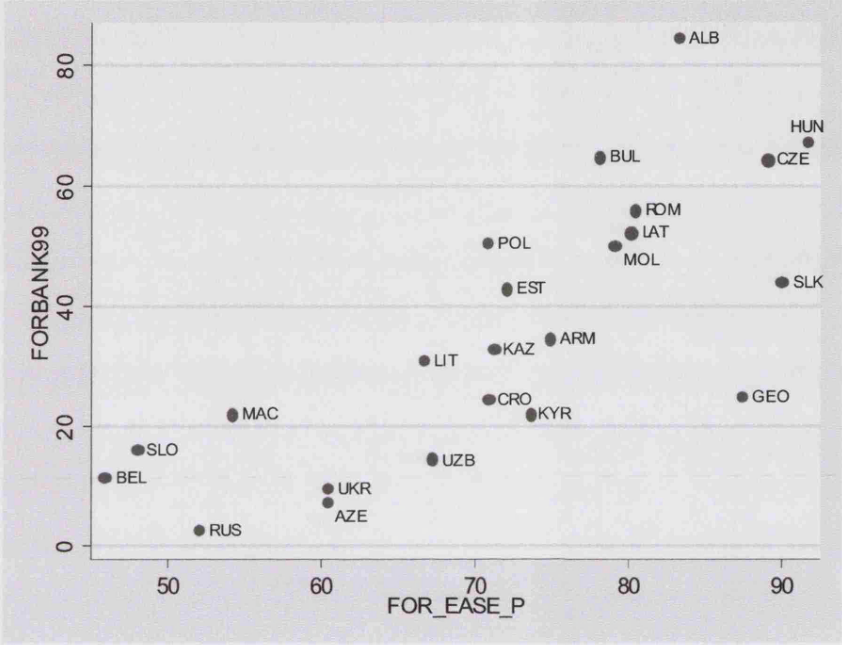
4.3.1.2 Ease of Foreign Bank Entry

In Chapter 2 we explained the rationale, citing some of the recent literature on the effects of foreign bank ownership, for the LIS questions on the legal regime for foreign bank entry. We get the following ranking of the transition countries on the sub-index of Ease of Foreign Bank Entry (FOR_EASE_P): the top five ranking countries are Hungary, the Slovak Republic, the Czech Republic and Georgia (Figure 4.2).

The most striking outcome of the ranking on the sub-index of Ease of Foreign Ownership (FOR_EASE_P) are the very high rankings of Georgia and Albania, and the extremely low ranking of Slovenia with 1.92 points out of 4, surpassing only Belarus. Also noticeable are the relatively high rankings of Moldova, Kyrgyzstan, Kazakhstan and Uzbekistan, with Kyrgyzstan and Kazakhstan attaining similar scores on the legal ease of foreign bank entry to those of Estonia and Poland (72.02 for Estonia and 70.83 for Poland). How are these perceptions of the lack of restric-

[4]Again, email correspondence with the authors of the BCL database, revealed that in the case of Belarus the high score was due to the authors' understanding that the law offers some insulation from political pressures to remove the head of bank supervision, i.e. "the head of the bank supervisory agency is removed by the President on grounds stipulated by law with notification of the Council of the Republic".

Figure 4.2: Share of Foreign Banks in 1999 and Legal Ease of Foreign Bank Entry



tions on foreign bank ownership justified? The high rankings of Hungary and the Czech Republic are not surprising in view of the fact that both countries increased the share of foreign ownership in banking throughout the 1990s, both through *de novo* greenfield investment and also through privatizations of domestic banks to foreign owners, and had a share of foreign banks in total bank assets around 65% in 1999. As mentioned in Chapter 2, Hungary has now a banking system, in which foreign-owned banks are actively involved in retail banking. The low ranking of Slovenia is due to two of the three responding firms indicating that a special license is mandatory before a foreign entity can acquire shareholdings in a local bank (the third respondent did not provide an answer), and that the licensing requirements for foreign banks are different. The mid-table rankings of Poland and Estonia also stem from the fact that four out of seven Polish respondents and three out of seven Estonian respondents also indicate that such a license is needed. A similar outcome

appears for Croatia too, where one of the nine respondents also says that foreign ownership in banking is not permitted.

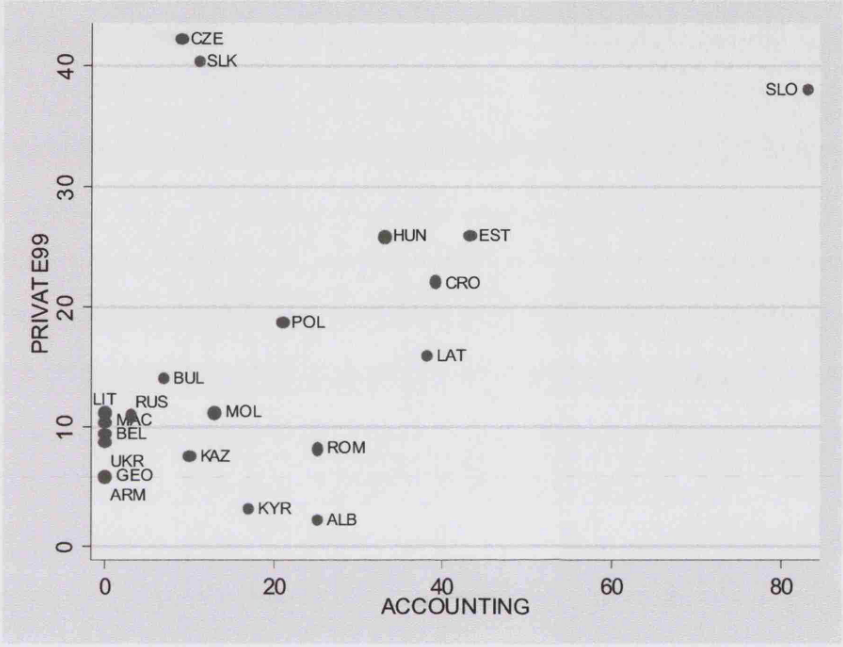
The Barth et al. (2001) database also builds an index of the limitations on foreign ownership (FOREIGNLIMITS) which varies from 0 to 2, with increments of 1 added, if foreign banks may not own domestic banks, and if foreign banks may not enter a country's banking industry. If both foreign ownership and foreign bank entry are restricted, the index is equal to 2. If both are allowed, it takes on the value of 0. If either one or the other is restricted, the index has the value of 1. Of the transition economies covered by the Barth et al. (2004) sample, only Lithuania, Romania and the Russian Federation score 1; the remaining transition countries have score values of 0 on this measure, indicating a lack of restrictions on foreign bank ownership and entry. The index is based on answers to a survey run by the U.S. Office of the Comptroller of the Currency (OCC), which is used in the Barth et al. (2001) database.[5]

4.3.1.3 Private Monitoring of Banks

In Chapter 2 we outlined the need for effective instruments for private agents' monitoring of banks such as proper accounting standards for banks, regular financial disclosure and annual audits, external audit review and examinations of banks on

[5]For the 11 countries for which we have at our disposal the Barth et al. (2004) measure of FOREIGNLIMITS, we check the correlation with our measures of the ease of foreign entry. The BCL index gains higher values for more restrictiveness, whereas our aggregate index of the ease of foreign bank entry (FOR_EASE_P) gain higher values for less restrictiveness, so we would expect a negative association. Indeed, this is found to be the case: the correlation is negative at -0.17. Furthermore, comparing the BCL index to our two sub-indices which are closest in content to it (FOR_PERM_P and FOR_RESTR_P), we find an even stronger negative association: at -0.52 and -0.51 respectively. This is not surprising since Barth et al.'s measure is 0 for all but three transition countries. This is in line with the fact that most of these countries did allow and had foreign banks in 1999.

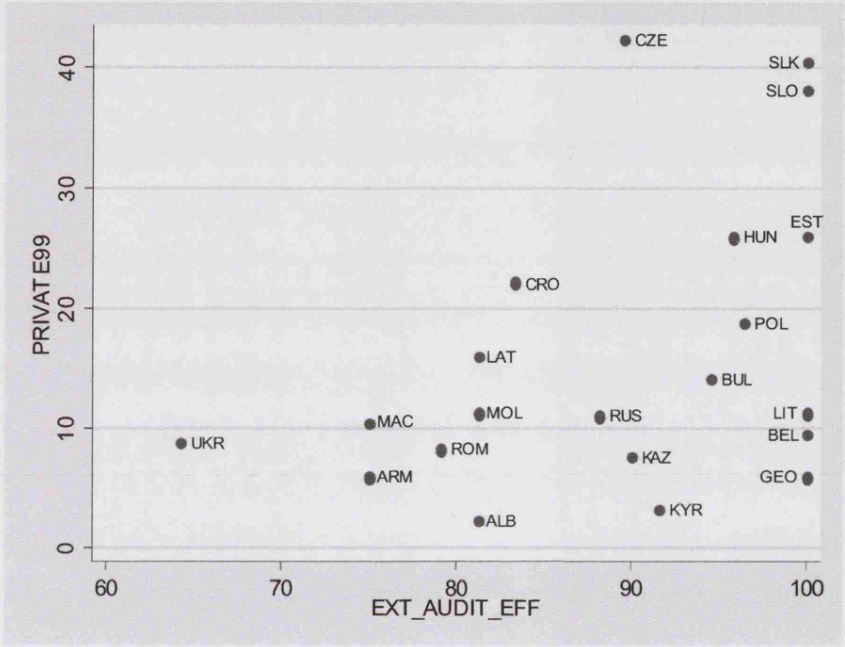
Figure 4.3: Private Credit and Accounting Rules Writing



a consolidated basis. Here we present some cross-country comparisons of the main indices related to private monitoring of banks based on the LIS. Figure 4.3 illustrates the index of ACCOUNTING (based on Q24) against private credit. The ACCOUNTING index measures the degree to which the professional accounting community has a say upon rules for bank accounting. We find that many countries score zero points, i.e. their laws prescribe no role for the accounting community in rule-writing. The highest-ranking country is Slovenia, followed by Estonia, Croatia, Latvia and Hungary. We note from the diagram the relatively low ranking of both the Czech and Slovak Republics, where, according to respondents' perceptions, accounting rules were set mostly by the government in 1999. These two countries are clear outliers, and may improve the regression fit if they are dropped from the estimations later on.

Figure 4.4 presents the index of effectiveness of external auditing of banks (EXT_

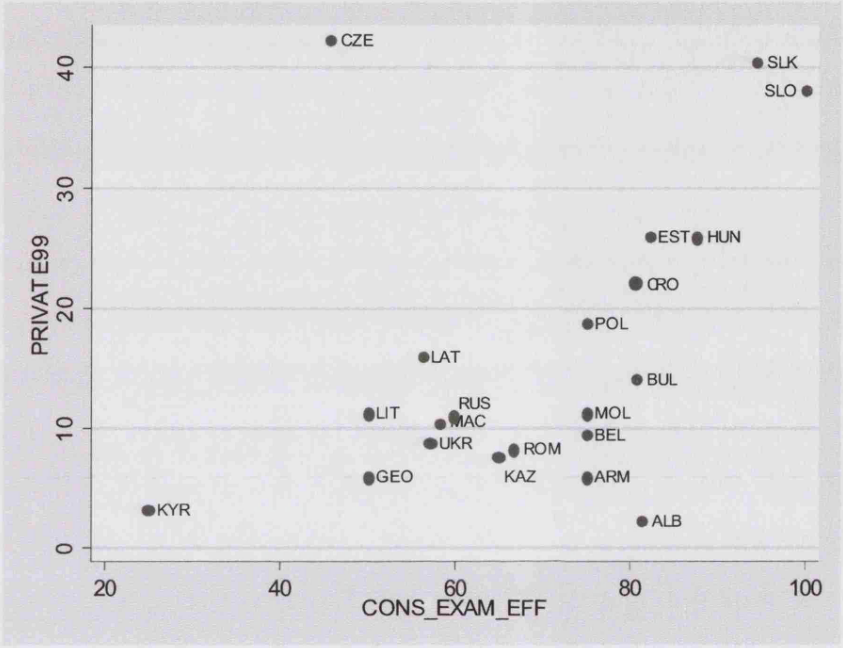
Figure 4.4: Private Credit and Effectiveness of External Auditing of Banks



AUDIT_EFF), which is based on the answers to Q26, against the ratio of private credit to GDP in 1999. We note that many of the advanced transition countries and the ones with most developed credit markets, such as the Slovak Republic, Slovenia, Estonia, Hungary and Poland score high on this measure. Among them we note the presence of Georgia and Belarus, whose respondents indicate that banks have their books audited by external auditors almost in all cases. The lowest-ranking countries on this index are Ukraine, Armenia, and FYR Macedonia.

Next, Figure 4.5 shows a scatter diagram of PRIVATE99 against the index of effectiveness of consolidated examinations of banks (CONS_EXAM_EFF). The latter index is based on question Q28, which measures the frequency with which banks are examined on a consolidated basis by bank supervisors. The graph displays a positive relationship between private credit and the frequency of consolidated examinations. Upon inspection, the only outlier is the Czech Republic, which has the highest ratio

Figure 4.5: Private Credit and Effectiveness of Consolidated Examinations of Banks



of private credit to GDP, but has one of the lowest scores on this index. Its score is close to those of Lithuania and Georgia, and exceeds only the same score for Kyrgyzstan. We may want to remove it from the regressions – that will be expected to improve the fit.

We aggregate all the answers to the LIS questions related to private monitoring together (Q22 to Q28 as given in Table 4.29 in Appendix 4.B) and compare this measure to the BCL aggregate index of Private Monitoring. The two measure similar concepts, and some of their ingredients are identical (i.e. whether certified audits are mandatory for banks, or whether banks must produce consolidated accounting information, covering all bank and non-bank financial subsidiaries). For the 21 transition economies covered by both the LIS and BCL studies (Barth et al. (2004) does not cover Ukraine and Uzbekistan), we establish that there is a moderate

positive correlation (0.29) between the two aggregate indices of Private Monitoring.[6] This allows us to compare our results of the effect of Private Monitoring of banks to theirs.

4.3.1.4 Permissible Bank Activities

We next examine the sub-indices of Permissible Activities, Prohibited Activities for Banks and Restrictions on Banks Holding of Securities, based on the LIS questions Q7, Q8 and Q9, and the aggregate index of Restrictions on Bank Activities (ACT_RESTR_P), which is the average of the three. We compare them with the BCL index of Restrictions on Bank Activities. The latter measures the degree to which banks can engage in securities, insurance and real estate activities, and also includes measures of legal restrictions on the ability of banks to own non-financial firms. Each of the four components of the BCL index is measured on a 1 to 4 scale, with higher values standing for greater restrictiveness[7]. Since our LIS indices give higher scores for less restrictions on bank activities, we would anticipate a negative correlation between our index of Restrictions on Bank Activities and the BCL one.

[6]In terms of comparing the sub-indices which are closest in content, we find a positive correlation (0.32) between our CONS_STAT_EXT index (i.e. the extent-of-law measure of whether consolidated statements are mandatory) and the Barth et al. sub-index of whether consolidated accounting is mandatory. However, there is almost zero correlation (0.03) between our index of the enforcement of consolidated examination (CONS_EXAM_EFF) and the Barth et al. measure, which is not surprising given that they measure different things. Finally, there is no variation in the Barth et al. sub-index of mandatory certified audits (all 21 countries score 1), so we cannot compare it to our two indices related to mandatory annual bank audits and the use of external auditors for these (MAND_AUDIT_EXT and EXT_AUDIT_EFF).

[7]See Barth et al. (2004) for the specific survey questions and the index scoring. The following values are attached to the BCL indices on bank activities: 1 stands for Unrestricted, 2 stands for Permitted, 3 stands for Restricted, and 4 stands for Prohibited. Therefore, the most restrictive regime would have a total score of 16 (for securities, insurance, real estate and banks owning non-financial firms).

Indeed, this is found to be the case. The correlation coefficient between the two aggregate measures is (-0.24). It is driven by the correlation of the sub-index of Prohibited Activities for Banks and the BCL index (-0.25), and the correlation of the sub-index of Permissible Activities for banks and the BCL index (-0.20). However, there is a very low negative correlation between the BCL index and the LIS sub-index of Restrictions on Banks Holding of Securities (-0.08). Therefore, overall comparisons are possible of the use of the BCL and LIS aggregate indices on legal restrictions on banking activities in the regression analysis.

4.3.1.5 Supervisory Power

Chapter 2 presented the rationale for the LIS questions on supervisory powers. One of these powers includes supervisory authority on ensuring bank compliance with bank anti-money laundering laws. We build an index of the enforcement options available to bank supervisors to ensure such compliance (ANTI_LAUND_EFF), and show its relationship with private credit to GDP in 1999 in Figure 4.6. We find that this index measure scores highest in Bulgaria, followed by Hungary, Estonia, Romania, Albania, and the Czech and Slovak Republics. Our aggregate index of Bank Supervisory Powers[8] displays a high positive correlation with the BCL Official Supervisory Power index (correlation coefficient of 0.59, which is significant at the 1% level). This high and significant positive correlation is not telling much since the two measures – while in principle measuring the same concept, i.e. the official powers which Banking Laws endow bank supervisors with – have a limited common coverage. For example, the Barth et al. index of Official Supervisory Power is a sum of answers to 14 "Yes/No"-type questions, eliciting information on whether supervisors can meet with banks' external auditors without the banks' consent; whether

[8]It aggregates the individual indices based on questions Q3, Q4, Q5a, b and c, Q13, Q14a and b, Q15, Q16, Q31 and Q32.

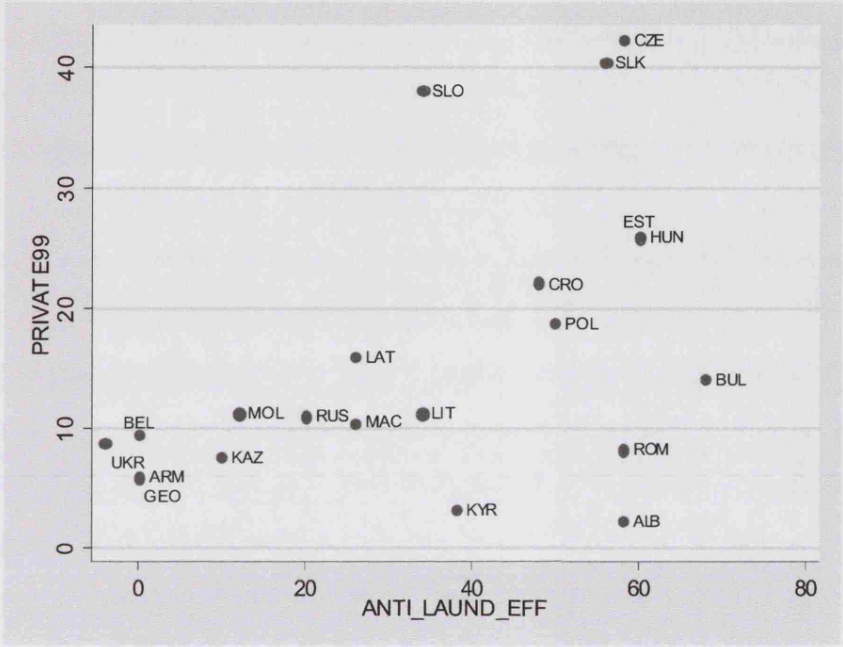
supervisors can take legal action against bank auditors; whether supervisors can suspend bank directors' decisions to distribute dividends, bonuses and management fees; whether supervisors are authorised to intervene in a problem bank, etc. The LIS measure of Supervisory Powers is the sum of Q3, Q4, Q5a, b and c, Q13, Q14, Q15, Q16, Q31 and Q32. The most prominent of these are whether supervisors are authorised to conduct on-site examinations and the frequency with which they occur; whether there are professional supervision staff to conduct such on-site examinations; whether supervisors have powers related to undertaking anti-money-laundering actions against banks and how much of this occurs in practice; whether supervisory approvals are mandatory for important bank decisions; and whether supervisors can undertake corrective actions against banks. Therefore, while some overlap between our and their measures exists, the two indices also cover different issues related to supervisory power, and the high correlation may, at least in part, be spurious. We also compare the Barth et al. index of Prompt Corrective Power to our two measures of supervisory corrective action, based on Q31 and Q32, and find a relatively high positive correlation (0.43 and 0.38). Unfortunately, two of our interesting supervisory powers measures – i.e. ability to conduct on-site examinations and the frequency of doing so do not have an immediate counterpart in the BCL database and no comparison is possible.

4.3.1.6 Competition Regulatory Variables

As explained in Chapter 2, the LIS gathers information on bank entry requirements (Q12), which gives rise to the index of ENTRY_REQ_P. The Barth et al. (2004) database also contains similar information about entry requirements. For instance, their Entry into Banking Requirements index measures the legal requirements for obtaining a license to operate as a bank[9]. They also add to it information about

[9]They track which of the following are required to be submitted in applying for a bank license: draft by-laws; intended organisation chart; financial projections for first three years; financial infor-

Figure 4.6: Private Credit and Effectiveness of Bank Anti-Laundering Regulations



limitations on foreign bank ownership and entry. The two capture how difficult it is to open a new bank. A comparison between their sub-index of Entry into Banking Requirements with the LIS measure reveals that the two are only weakly correlated (0.14). This may be due to the BCL index not having much variation, with most countries scoring the maximum 8 points, indicating a comprehensive entry test. Only several countries - Armenia, Azerbaijan, Croatia, Georgia, Hungary and Poland – score 7 points on the BCL measure. The weak correlation between the two measures does not permit a comparison of the BCL results and our results on the impact of entry requirements on private credit and other banking development measures.

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mation on main potential shareholders; background/experience of future directors and managers; sources of funds to be disbursed in the capitalisation of the new bank; market differentiation intended for thew new bank. Their list is more comprehensive than the corresponding one in Q12 of the LIS, but both are very similar.

4.3.1.7 Capital Adequacy Requirements

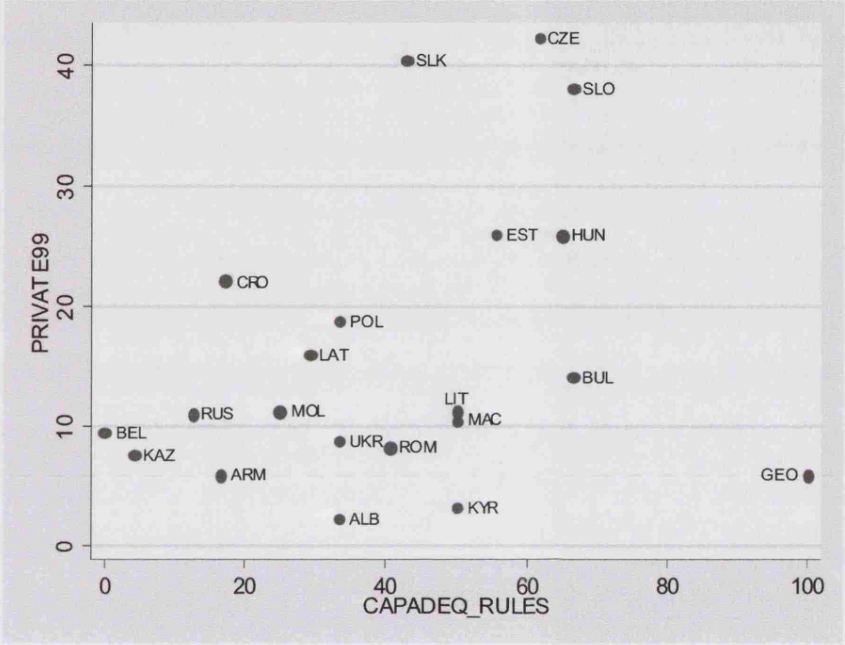
As outlined in Chapter 2, we measure adherence to the Basle Capital Adequacy Rules by question Q29. The extent of such legal rules are captured by the index of CAPADEQ_RULES. We get the following results for this index (shown against private credit in Figure 4.7): Georgia scores again the maximum points, but this is based on one survey answer. Slovenia, Bulgaria, Hungary, the Czech Republic and Estonia rank next. The bottom-ranking countries are Azerbaijan, Uzbekistan (not shown in Figure 4.7 since no private credit data are available), Kazakhstan and Belarus. From the perspective of capital adequacy being well specified in the laws and understood by bank managers (CAPADEQ_UND), the ranking has eight countries scoring maximum points, among which Estonia, Lithuania, Slovenia, Albania, Armenia, Azerbaijan, FYR Macedonia and Georgia. Asked whether the minimum capital-asset ratio must be risk-weighted in accordance with Basle guidelines, all transition economies in the BCL database answer positively. Comparing our index of CAPADEQ_RULES and the Barth et al. index of Overall Capital Stringency[10], we find a positive correlation of 0.23. Such a positive, limited correlation should be expected since both measures assign higher scores to greater capital stringency, but the Barth et al. measure covers provisions related to capital, which are not included in the LIS measure.

Figure 4.7 shows that a positive relationship exists between the private credit share in GDP and capital adequacy, and the fit will be stronger if the outlier of Georgia is omitted.

Finally, Figure 4.8 displays the index of Banking Law enforcement (EFFBANK99) and private credit in 1999. The index of EFFBANK99 is a composite of the

[10]The index of Overall Capital Stringency covers whether the minimum capital requirement for banks must be risk-weighted, and whether certain market losses must be deducted from capital before the capital adequacy ratio is determined.

Figure 4.7: Private Credit and Capital Adequacy Rules

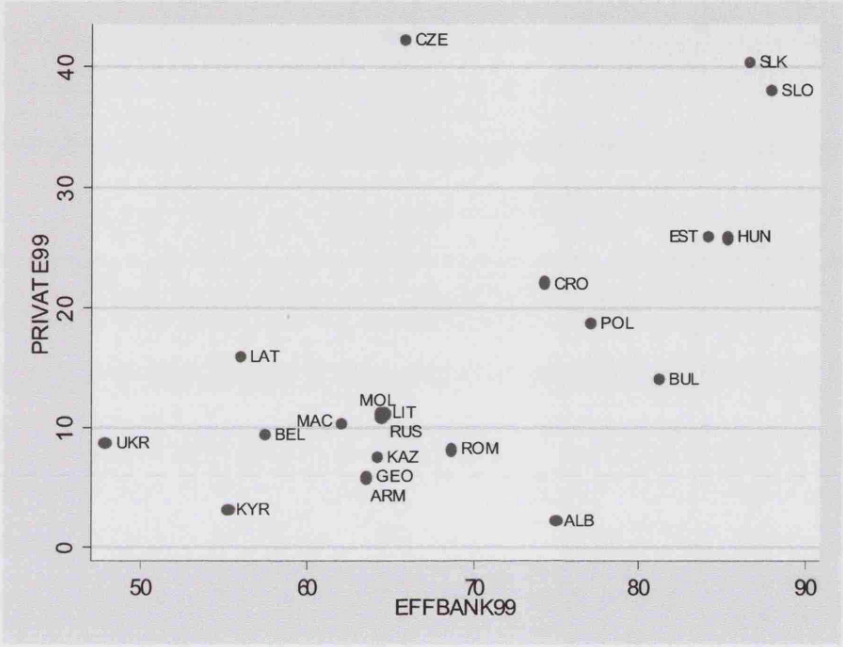


four indices of EXT_AUDIT_EFF, CONS_EXAM_EFF, ANTI_LAUND_EFF and PROF_EXAM_P (the latter index measures the availability of professional bank examiners to conduct on-site examinations of banks, and is based on Q5c). These are the main effectiveness (enforcement)-related indices from the Banking Law section of the LIS. The diagram shows a positive relationship, with higher values of PRIVATE99 being attained when EFFBANK99 scores higher. The Czech Republic is an outlier again.

4.4 Methodology

The purpose of this chapter is to examine whether the perceived extent of banking laws and their enforcement in practice have an impact upon bank development in the transition economies. To accomplish this, we will follow the same methodology

Figure 4.8: Banking Law Enforcement and Private Credit in 1999



outlined in Chapter 3. We adopt a standard cross-sectional regression approach which we consider preferable to simple descriptions of scatterplots of the data. Our approach is motivated by the need to control for various factors, found to affect financial development in previous studies, and by an objective to compare our findings with others in the literature, e.g. Barth et al. (2004). Thus, we conduct ordinary least squares estimations (OLS) of the main regression specification, and supplement these with instrumental variables (IV) estimations. We must note that a drawback of the chosen method is the rather low degrees of freedom with which we operate – the sample size is 22 observations at most. Nevertheless, we attempt to overcome such weaknesses by conducting extensive robustness checks of the main results.

4.4.1 Choice of Variables and Regression Specification

We employ one main measure of bank development – private credit relative to GDP. Private credit (PRIVATE) measures the volume of loans, extended by domestic commercial banks to private firms and households. Therefore, it measures lending activity to private borrowers, and higher private credit flows as a share of national income mean that domestic banks engage actively in financial intermediation. It is a standard measure of the size and liquidity of the domestic credit market.

Alternative outcome measures in our regression analysis are the share of non-performing loans in the total loans of domestic banks (NON_PERFORMING), and the share of foreign banks (FORBANK) in the domestic banking industry. Non-performing loans is a measure of the quality of the bank loan portfolio, and reflects the overall level of domestic bank efficiency. This measure is somewhat controversial for the transition economies since it can also be affected by the degree of bank restructuring and firm restructuring. Since many countries adopted legislation to clean up bank balance sheets by writing off non-performing loans inherited from the past, a low level of non-performing loans may only be indicative of a recent clean-up of bank balance sheets. The degree of foreign bank penetration is a measure of market structure. As discussed earlier, many studies on bank performance in transition find that foreign entry is associated with increased competition and improved efficiency in the provision of banking services. Therefore, we take the percentage of foreign banks operating in the domestic bank market as another outcome measure, and test how various banking regulation measures affect foreign entry.

There are also other variables which are used as proxies for bank development in the related literature. These include liquid liabilities of domestic banks, which comprise currency, demand and interest-bearing liabilities of banks and non-bank financial institutions, and is a proxy of the size of the financial system. Another available measure equals the ratio of commercial bank domestic assets to the sum

of commercial bank domestic assets and central bank domestic assets. The underlying intuition behind this variable is that commercial banks are more likely to identify profitable financial projects, monitor managers, facilitate risk management and mobilize savings than the central bank. Indeed, previous research has found that richer countries, which enjoy more developed financial industries, have higher levels of COMMERCIAL-CENTRAL BANK measures (around 0.9), while in the poorest countries the same variable attains lower levels. Another measure which Beck et al. (2000) employ in a series of papers is the volume of private credit by both domestic deposit money banks and non-bank financial intermediaries, divided by GDP. Therefore, that measure is broader than the one which we employ. We must stress that the two are likely to be very highly correlated for our sample of countries since non-bank financial intermediaries are still nascent in the transition economies. Finally, some authors, e.g. Barth et al. (2004), employ banking crises as an outcome variable to assess the impact of bank regulation on bank development and performance. Banking crises are a proxy for financial instability. Since some of the transition economies went through banking crises (notably, Russia in 1998; Bulgaria in 1996-1997) in the years prior to 1999, but our banking legal data are for 1999, we are not going to employ this measure in our analysis. We will assess, however, the robustness of our results by using as dependent variables both the liquid liabilities of domestic bank and non-bank financial intermediaries (LIQUID), and the degree of intermediation by commercial banks as opposed to the central bank (COMMERCIAL).

We employ several control variables in the regressions of bank development on banking law and regulations to control for factors which are likely to affect bank lending. For example, much like in the securities regulation regressions of Chapter 3, macroeconomic stability is likely to affect banking development. As discussed in Chapter 3, recent empirical evidence finds that inflation significantly reduces the

volume of private credit, e.g. Boyd, Levine and Smith (2001). Inflation reduces expected returns of depositors, and therefore erodes the deposit base of a country's financial system. Furthermore, inflation distorts prices and interferes with the banking system's ability to allocate resources to their most efficient use. In recognition of this evidence, we again employ average inflation (the average of annual CPI-based rate of inflation) over the period 1995-1999 as one of the control variables in the regressions. Preliminary correlations indicate that inflation (AVINFL) is negatively associated with PRIVATE99 (partial correlation coefficient of -0.36).

An important factor for bank lending is the availability of information about the riskiness of potential projects to be financed. The availability of information about borrowers is a crucial element in the decision to lend. Most developed market economies rely on credit-rating agencies and credit registries which can provide information about borrower history. To correct for availability of information, we employ a variable which measures the presence of a public credit registry, and the scope of information provided in it. This variable is available for all the transition countries in our sample with the exception of Estonia, and has been constructed by the World Bank Investment Climate Department, World Bank (2004a). The PUBLIC_REG index is an average of four sub-indices about the collection of information, the distribution of information, the access to information and the quality of information contained in it. It is measured on a 0 to 100 scale, with higher values indicating better and more extensive information in the public credit registry. A value of 0 indicates that the country does not maintain a public credit registry. The PUBLIC_REG index is positively correlated with PRIVATE99 (the correlation coefficient is 0.47, and is significant).

An important factor for banks' lending decisions in transition economies is the degree of banking competition, as well as the market incentives which banks face. For instance, limited competition and state ownership of banks can distort incen-

tives and lead to credit rationing, or credit being directed to politically-motivated projects or government enterprises. Such a description fits well most of the transition economies at some point during the first decade of transition. Privatization of banks, which generally occurred later than privatization of companies, and is still an ongoing process in a number of sample economies, is important for better aligning bankers' incentives and for providing discipline and restructuring. To capture the effects of bank privatization and restructuring, we also control for the share of bank assets held by domestic banks, in which the government holds a controlling stake (STATE_BANKS). Prior research has shown government ownership of banks to be negatively associated with bank development and performance, e.g. La Porta, Lopez-de-Silanes and Shleifer (2002). We find negative correlation between state ownership of domestic banks, and PRIVATE99, but the negative association weakens as we move closer to 1999 (the correlation coefficient between STATE_BANKS in 1995 and PRIVATE99 in 1999 is -0.28, but only -0.02 between STATE_BANKS in 1998 and PRIVATE99 in 1999).

Another factor, affecting banks' lending decisions, is whether or not bank portfolios continue to roll over bad and non-performing loans, inherited from the previous regime.

Finally, bank development is also likely to depend on general economic development. For instance, past research has demonstrated that as countries grow and become richer, financial markets become more sophisticated in managing risks, allocating resources and monitoring borrowers. Richer countries have deeper financial markets, therefore we would expect a higher lending activity in countries with higher incomes per capita. To control for economic development, we employ the logarithm of GDP per capita in 1999. Since it is correlated with some of the explanatory variables, however, we use the same procedure as used in Chapter 3 to isolate the impact of economic development. First, we regress in an OLS estimation private

credit in 1999 on the log of GDP per capita and a constant, and then use the residuals from the estimated model to assess whether banking law and its enforcement have any impact beyond that of economic development. As mentioned in Chapter 3, this procedure assumes that GDP per capita and our banking law variables are independent. If however, GDP per capita and the banking law variables are correlated, which is usually the case here, the procedure results in biased and inconsistent estimates. Acknowledging the difficulty in disentangling legal from economic development, we also perform robustness tests by including the log of GDP per capita in the regression alongside the legal and other variables.

Our basic regression model is as follows:

$$BANKDEV99_i = a + b * LEGEXT99_i + c * LEGEFF99_i + d * Controls + u$$

$BANKDEV99$ is the measure of bank development, a is a constant term, $LEGEXT99$ and $LEGEFF99$ are the respective extensiveness and effectiveness components of banking laws, and the set of control variables include average inflation (AVINFL), an index of public credit registry (PUBLIC_REG), the share of state banks in total domestic bank assets in 1998 (STATE_BANKS98), and (the logarithm) of GDP per capita in 1999 (LGDPPC99). In order to capture the relationship between private credit and bank regulation, we will use disaggregated indices of banking law and regulation, most of which have both an extent-of-law (extensiveness) dimension and an enforcement (effectiveness) dimension.

In summary, the estimated model uses cross-sectional data, generally relies on contemporaneous dependent and explanatory variables and poses endogeneity, simultaneity and multi-collinearity issues. These were discussed in detail in Chapter 3, so it suffices to say that we will undertake steps, similar to those outlined in Chapter 3 to confront these estimation problems.

4.4.2 Endogeneity and Instrumental Variables

We address potential endogeneity between our financial development and legal development variables by estimating our model both via ordinary least squares (OLS) and instrumental variables (IV) techniques. As explained in Chapter 3, to correct for bias in the OLS estimates due to endogeneity of the dependent variable and the regressor on banking law, we must identify a suitable instrument for our banking law measures – both those relating to extent-of-the law and to its enforcement. We adopt instrument sets similar to the ones already used in Chapter 3.

First, as in Chapter 3, legal origin is a natural candidate for instrumenting current legal development. In the growing empirical literature on law, finance and growth, legal origin dummies are routinely employed to correct for endogeneity in the estimated regressions. Those studies, which cover transition countries, place them all as belonging to the same legal family – as having a Socialist legal origin. Other studies exclude the transition countries, e.g. La Porta (1997, 1998), due to the rapid changes and reform of economic laws in these countries during the 1990s. Notwithstanding their common past and the legacy of several decades of socialist legal institutions, the transition economies are actually heterogeneous with respect to their legal heritage. Legal scholars, such as Pistor (2000), note this heterogeneity and argue that the experience of some of these countries, such as those from Central Europe, differs substantially from the experience of others, such as the former Soviet republics. The Central European countries – the former Czechoslovakia, Hungary, Poland, Slovenia and Croatia – had their major commercial and civil legislation at the end of the 19th and beginning of 20th centuries heavily modeled on the then German commercial and civil codes. This effect also came through the Austrian codes for Hungary, Slovakia, Slovenia and Croatia, which had all been part of the Austro-Hungarian Empire. Poland, and the three Baltic states – Latvia, Lithuania and Estonia – were also influenced by German laws mostly, although French civil

law and the Napoleonic codes influenced Polish codifications in the 19th century, but subsequently the German influence has been stronger. Some authors also argue that Scandinavian law affected the Baltic countries, and particularly Estonia. In contrast, the South-Eastern European countries, such as Bulgaria, Bosnia and Herzegovina, Albania, FYR Macedonia and Romania have a legal heritage determined by their being part of the Ottoman Empire. French law was adopted by the Ottoman Empire toward its end, and thus French law affected these countries as well as Greece. Therefore, all the South-Eastern European countries (the Balkan nations apart from Croatia) can be classified as mainly French legal origin countries. Finally, Pistor (2000) argues that the former Soviet Union had quite a disparate legal history prior to the formation of the USSR in 1922. First, imperial Russia was affected by German codes in the late 19th century, and its prior legal history could be traced back to Roman and Byzantine law. The Central Asian countries, which were subsumed in the Soviet Union, had their legal systems based on Islamic law. Despite this diversity, most commercial law governing a capitalist productive system had not taken a firm foothold in Russia prior to the revolution (Russia and the other constituent republics had a mostly feudal system of production until late in the 19th century). Therefore, it is justified to group these countries together as Socialist legal origin countries (since most of them moved from a feudal to a socialist system). We have therefore, as in Chapter 3, decided to explore this distinction between French, German and Socialist legal origin countries within the subset of transition economies. Preliminary analyses indicate that legal origin – thus defined – helps explain recent shareholder and creditor legal rights, e.g. Pistor (2000), as well as current legal enforcement. In addition, t-tests for differences in mean banking laws, shown in Table 4.1, indicate significant results for most of our legal variables across the three legal origin countries. Therefore, we use legal origin dummies as our main instrument set for our banking law measures.[11]

[11] Apart from legal origin, we also consider legal transplant status as an instrument of current

Table 4.1: Legal Origin and Banking Law Effectiveness: Average Scores for Each Country Group

Legal Origin	ANTI_LAUND_EFF (mean)	CONS_EXAM_EFF (mean)	EXT_AUDIT_EFF (mean)	CAPADEQ_RULES (mean)	EFFBANK99 (mean)
Socialist	8.80	60.06	89.04	26.39	61.00
French	42.00	72.40	81.01	58.11	70.13
German	47.33	74.64	94.05	46.85	75.76
T-test	-2.50**	-1.86**	1.51*	-2.09**	-2.29**
Socialist/French	(0.0282)	(0.0435)	(0.0786)	(0.0328)	(0.0308)
T-test	-6.53***	-1.78**	-1.08	-1.85**	-3.52***
Socialist/German	(0.0000)	(0.0476)	(0.1476)	(0.0422)	(0.0023)
T-test	-0.40	-0.28	-2.97***	0.85	-1.08
French/German	(0.3533)	(0.3908)	(0.0092)	(0.2133)	(0.1515)

Note: The table reports average scores for each category as well as the probabilities of rejecting the null hypothesis of equal means. One-tailed t-tests are reported. P-values are shown in parentheses next to t-statistics.

Second, as indicated in Chapter 3, cultural factors, and religion in particular, have been found to also affect creditor rights and their enforcement across large samples of countries, e.g. Stulz and Williamson (2003). Since, like legal origins and transplants, religion can be assumed exogenous to current financial development, but is correlated with current legal development and enforcement, it can serve as another instrument for legal development. Accordingly, we use religion dummies – defined as the main religion practised by the majority of the population, as given by

banking laws. However, as in Chapter 3, transplant status dummies turn out to be poor instruments for most of our endogenous banking law variables. We, therefore, do not use TRANSPLANT_ST in the IV regressions.

Table 4.2: Religion and Banking Law Effectiveness: Average Scores for Each Country Group

Main Religion	ANTI_LAUND_EFF (mean)	CONS_EXAM_EFF (mean)	EXT_AUDIT_EFF (mean)	CAPADEQ_RULES (mean)	EFFBANK99 (mean)
Muslim	19.67	60.83	89.65	34.95	64.50
Orthodox	20.00	66.40	84.17	38.30	63.75
Catholic	48.57	76.19	95.02	48.13	77.37
Protestant	43.00	69.20	90.63	42.37	70.13
T-test	-0.03	-0.61	0.94	-0.19	0.19
Muslim/Orthodox	(0.4900)	(0.2797)	(0.1817)	(0.4280)	(0.4254)
T-test	-2.78**	-1.33	-1.13	-0.81	-2.89***
Muslim/Catholic	(0.0139)	(0.1054)	(0.1451)	(0.2228)	(0.0079)
T-test	-1.20	-0.54	-0.10	-0.37	-0.39
Muslim/Protestant	(0.1861)	(0.3216)	(0.4680)	(0.3639)	(0.3789)
T-test	-2.93***	-1.13	-2.27**	-0.79	-2.91***
Orthodox/Catholic	(0.0067)	(0.1459)	(0.0207)	(0.2206)	(0.0064)
T-test	-1.20	-0.21	-0.63	-0.24	-0.44
Orthodox/Protestant	(0.1890)	(0.4329)	(0.3073)	(0.4134)	(0.3645)
T-test	0.32	0.46	0.45	0.39	0.50
Catholic/Protestant	(0.3996)	(0.3468)	(0.3605)	(0.3721)	(0.3487)

Note: The table reports average scores for each category as well as the probabilities of rejecting the null hypothesis of equal means. One-tailed t-tests are reported. P-values are shown in parentheses next to t-statistics. The Muslim countries covered are: Albania, Azerbaijan, Kazakhstan, Kyrgyzstan and Uzbekistan. The Orthodox countries are: Armenia, Belarus, Bulgaria, FYR Macedonia, Georgia, Moldova, Romania, the Russian Federation and Ukraine. The Catholic countries are: Croatia, the Czech Republic, Hungary, Lithuania, Poland, the Slovak Republic and Slovenia. The Protestant (Lutheran) countries cover only Estonia and Latvia.

the U.S. Central Intelligence Agency (CIA) Country Factbook 2004 (on-line edition) – as an alternative instrument set for our banking law measures. Table 4.2 presents tests for differences in mean banking law scores across the sample countries grouped by religion.

Finally, we also use years under communism as a measure of historical memory of market institutions to instrument for current legal development.[12]

4.5 Regression Results

In this section we present regression results for private credit (PRIVATE99) as the dependent variable. We first take an approach of checking for the significance of a broad set of our banking law variables, which are as disaggregated as possible. Then we also show results for aggregate indices of banking law and its enforcement. This approach allows us to pin down which specific legal structures contribute to financial development.

We proceed with OLS estimations of PRIVATE99 in 1999 on the different banking law indices and controlling for inflation, the share of state-owned banks and the presence and scope of information-sharing among lenders as captured by the public credit registry index.

4.5.1 Information Disclosure (Private Monitoring)

We test for the independent impact of all the variables related to the disclosure of information by banks. First, we find that the use of external auditors for banks' annual financial (EXT_AUDIT_EFF) audits is positively and significantly associated

[12]T-tests for differences in means for the main banking law variables shown in Tables 4.1 and 4.2 indicate that there are significant differences in mean ANTI_LAUND_EFF across all three groups of countries as well as in mean EFFBANK99 and CONS_EXAM_EFF across the countries with high and low number of years under communism. These results are not reported to save space.

Table 4.3: Bank Disclosure Requirements and Private Credit, 1999. OLS Estimations

Indep. variable	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99
EXT_AUDIT_EFF	0.5238**				
	(0.2193)				
CONS_EXAM_EFF		0.3192**			
		(0.1245)			
ACCOUNTING			0.2405***		
			(0.0769)		
ACC_DISCREP				-0.1546**	
				(0.0643)	
DISCLOSE_EFF					0.8742***
					(0.2988)
AVINFL	-0.0218***	-0.0126	-0.0081	-0.0206***	-0.0252***
	(0.0068)	(0.0074)	(0.0059)	(0.0066)	(0.0085)
STATE_BANKS98	-0.1512*	-0.2001*	-0.1307	-0.1693*	-0.0927
	(0.0748)	(0.0988)	(0.0934)	(0.0862)	(0.0690)
PUBLIC_REG	0.1618	0.2349**	0.2291**	0.2340**	0.1779*
	(0.1071)	(0.1103)	(0.1058)	(0.1023)	(0.0874)
Intercept	-26.4	-3.1	11.9**	24.1***	-53.1**
	(17.633)	(8.6681)	(4.1523)	(5.1785)	(24.9044)
F-test (4, 15)	2.99*	6.50***	16.17***	3.63**	4.20**
	[0.0533]	[0.0031]	[0.0000]	[0.0292]	[0.0178]
No of obs.	20	20	20	20	20
R-squared	0.48	0.52	0.47	0.44	0.53

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

with private credit (column 1 of Table 4.3). Inflation and the share of state-owned banks have the expected negative signs, and are also statistically significant (at the 1% and 10% levels respectively). The availability of information about borrowers as captured by the index of public credit registry (PUBLIC_REG) has a positive impact on the volume of private credit, but in this particular specification misses significance at the acceptable levels. It must be stressed that the index of EXT_AUDIT_EFF is the effectiveness question related to mandatory annual audits. The corresponding extent-of-law (extensiveness) question is whether banks are subject to mandatory auditing of their annual results, and whether local and international accounting standards apply. In a separate specification, including simultaneously EXT_AUDIT_EFF and MAND_AUDIT_EXT – the mandatory requirement for annual audits – and the three control variables, we find that the extent-of-law measure is insignificant (and has a negative sign), while the enforcement measure EXT_AUDIT_EFF retains its significance at the 5% level (we do not report these simultaneous results here for brevity). Therefore, we find evidence that the effectiveness of this aspect of information disclosure matters for bank lending to private firms.

Another aspect of information disclosure is the requirement for banks to disclose financial results on a consolidated basis – CONS_STAT_EXT, and the frequency with which bank supervisors examine banks' consolidated accounts in practice – CONS_EXAM_EFF. As discussed earlier, consolidated statements and examinations are desirable since they can prevent banks shifting losses to a branch to hide its financial position. Again, we find evidence that the enforcement of provisions with respect to bank disclosure of consolidated financial accounts is beneficial for private credit volume. Thus, the CONS_EXAM_EFF index is statistically significant and positively associated with PRIVATE99. The control variables attain the expected signs, and are significant, with the exception of inflation which narrowly misses significance at the 10% level. In contrast, a separate specification (not reported here)

finds that the extent-of-law index CONS_STAT_EXT is positively associated with PRIVATE99, but is not statistically significant. In a specification which contains simultaneously the extent-of-law and effectiveness measures, we find again that the effectiveness component is significant at the 5%, whereas the extent-of-law one is not. In the latter regression all three controls are significant and have the expected coefficient signs. These results indicate that information disclosure by banks affects bank credit – in particular, enforcement of requirements related to consolidated accounts disclosure, as measured by CONS_EXAM_EFF, strengthens bank lending to the private sector, possibly due to more private monitoring of banks.

The other LIS questions related to information disclosure are on accounting standards and accounting rules. The index of accounting rules writing (ACCOUNTING) – whether accounting rules are set by the professional accounting community or the government – is found significant at the 1% level in the basic specification. It is robust to the inclusion of the standard control variables, of which only the degree of information-sharing among lenders, as measured by the public credit registry index, is significant. This finding again confirms the role of accounting standards which has been found by many related studies to be of crucial importance for financial markets. This accounting index is considered an extent-of-law (extensiveness) measure since it is related to the legal rules on who writes and adopts accounting rules.

Interestingly, we find that use of international accounting standards does not affect private credit – the association is statistically insignificant in the basic specification controlling for inflation, state-owned banks and credit information-sharing. Neither are IAS in process of being adopted found significant in the standard model. We do find evidence, however, that discrepancy between IAS and local standards, as captured by Q23, part 1, and summarized in the index of ACC_DISCREP, exerts a negative and significant impact upon private credit. The control variables are also found significant. This is considered an enforcement question even though it

mainly considers disparities in financial statements issued in accordance with local accounting rules, and the same financial statements issued in accordance with IAS. The idea is that better enforcement of accounting standards would lead to lower disparities between accounts issued according to the two sets of standards. Therefore, we would expect that the coefficient on ACC_DISCREP would have a positive sign, i.e. lower disparities score higher weights, which should lead to better enforcement of accounting rules, and hence result in higher lending. Therefore, the significant negative sign is puzzling. Moreover, it is robust to the inclusion of the index of ACCOUNTING (both keep their significance) and CONS_EXAM_EFF. It loses significance when we include the effectiveness of auditing (EXT_AUDIT_EFF), but the two indices are correlated (-0.39), so probably this is due to multi-collinearity.[13]

Finally, we also use the information collected by the LIS on document disclosure to bank supervisors. As explained earlier, a wider array of documents being disclosed is thought beneficial, and attains higher scores. Since document disclosure is meaningless without ensuring the quality of the disclosed information, we combine this sub-index with the index of auditing enforcement – EXT_AUDIT_EFF, i.e. we

[13]A possible explanation for this counter-intuitive result is the way the question is phrased – "Has the shift in accounting standards (i.e. from local to IAS) affected the financial and income statements of financial institutions (e.g. banks that previously showed a profit are now shown as having a loss)?" – and the particular answer menu chosen, "Not at all", "Only for a few banks", "For the majority of banks (greater than 50%)", and "For nearly all banks (almost 100%)". It is conceivable that respondents have interpreted the question to mean whether IAS have been adopted by the majority of banks or not, rather than the intended meaning of whether the shift has produced any substantial discrepancies between disclosed reports before and after the shift. After all, the wording of the main part of the question would easily lead one to infer the first meaning, and the part which contains the essence of the intended meaning is given in brackets, which may be overlooked. If such a wording effect is indeed occurring in this case, this would actually mean that lower scores are associated with more banks adopting IAS and this would result in higher lending. Since we have no way of testing whether this is true or not, we choose to treat this question with caution, but nonetheless report the results.

would like to test for the impact of document disclosure and auditing requirements in tandem. The new index – DISCLOSE_EFF, which is a simple average of the two – is statistically significant in our main specification and robust to the inclusion of the usual three control variables. In contrast, we do not find evidence that document disclosure by itself affects private credit significantly – when we test for DOCUMENT_DISCL alone in the same regression – its coefficient has a positive sign, but it is insignificant. Therefore, these results indicate that extensive disclosure requirements in the law are not sufficient by themselves to give bank supervisors an accurate picture of banks' financial standing – only when extensive disclosure requirements are coupled with enforcement of auditing requirements, do significant benefits materialise.

In summary, our results indicate that information disclosure rules and specifically their effective enforcement have a significant impact upon bank lending to the private sector. The effective application of auditing and consolidated examination requirements as well as the role of the private sector in accounting rule-writing are found to exert a statistically significant and positive impact on private credit, controlling for past inflation, availability of information about borrowers and presence of state-owned banks. Furthermore, we find evidence that adoption of foreign accounting standards by the majority of banks may also be associated with higher lending, but the interpretation of the estimated regression may be affected by question wording effects. Extensive disclosure by itself is not related to volume of private credit, but extensive disclosure and effective auditing are. Finally, the imposition of rules on mandatory auditing and consolidated reporting as well as use of IAS are also not found to affect private credit significantly. We interpret these results as supporting the recent theories of bank regulation as being beneficial when it allows for effective disclosure and enables good private sector monitoring. We also consider these results supportive of the finding in the literature on law and finance about the

importance of accounting standards and their application.

The results described here are based on OLS estimations, correcting for heteroscedasticity (Table 4.3). However, they are robust to alternative estimations. Table 4.4 shows the results of instrumental variables estimations of the same five basic equations, using Legal Origin, Religion and Years under communism as separate instruments for the banking indices.[14] Tables 4.5 and 4.6 show the first-stage results for our main legal variables, using these three different instrument sets. For brevity, we show the best fit for each endogenous legal variable. We also show the first-stage regressions for ANTI_LAUND_EFF and EFFBANK99 for both Religion and Years under communism. The first-stage regressions indicate significance of most of the explanatory variables and significant F-tests. Some of the F-tests are not very high, suggesting that the instruments are not very strong, but overall they are relevant.

We then report the second-stage results and two diagnostic tests – the Hausman test for the presence of endogeneity, and the over-identifying restrictions test (we report the Sargan test statistic) for the validity of the instrument sets. In four of our equations the Hausman test indicates endogeneity – i.e. the test statistic is significant at the acceptable levels. Therefore, a correction is needed.

The second-stage of the IV regressions shows that all our legal variables maintain significance and have the same signs as in the OLS estimations. In addition, four of the five equations (except for ACC_DISCREP) pass the over-identifying restrictions test – i.e. the test statistic is statistically insignificant, so we cannot reject the null hypothesis of no independent impact of the instruments upon private credit other than through the three legal indices. Only the estimation of ACC_DISCREP has a Chi-square test statistic which fails the test, i.e. we can reject the null hypothesis

[14]The Protestant countries in our sample are only two (Estonia and Latvia), and since there are no significant differences between them and the Catholic countries, we group them together (Catholic-Protestant) for the purpose of the IV estimations using Religion dummies.

Table 4.4: Disclosure Requirements and Private Credit, 1999. Instrumental Variables (IV) Estimations Using 2SLS and Legal Origin, Religion and Years under communism as instruments

Indep. variable	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99
EXT_AUDIT_EFF	1.2622***				
	(0.4170)				
CONS_EXAM_EFF		0.8428* (0.4321)			
ACCOUNTING			0.7633** (0.3429)		
ACC_DISCREP				-0.2523* (0.1352)	
DISCLOSE_EFF					2.5438** (0.9167)
AVINFL	-0.0310***		0.0065 (0.0079)	-0.0290**	-0.0460**
	(0.0077)			(0.0104)	(0.0166)
STATE_BANKS98	-0.1549* (0.0785)			-0.1474 (0.1047)	
Intercept	-87.4** (36.2259)	-42.3 (28.7732)	1.4948 (5.7523)	33.5*** (10.4728)	-185.4**
					(72.9869)
No. of obs.	21	22	21	21	21
F-test (1st stage)	F(4,16)=3.61	F(2,19)=2.40	F(3,17)=3.12	F(4,16)=2.45	F(3,17)=3.20
	[0.0278]	[0.1176]	[0.0535]	[0.0883]	[0.0500]
Hausman test	5.58 [0.0182]	4.13 [0.0422]	5.59 [0.0181]	0.55 (0.4597)	5.52 [0.0188]
OIR test (Sargan test)	$\chi^2(1)$ =0.592.	$\chi^2(1)$ =0.209	$\chi^2(1)$ =2.218	$\chi^2(1)$ =9.652	$\chi^2(1)$ =1.613
	[0.4416]	[0.6478]	[0.1364]	[0.0019]	[0.2040]

Note: ***, ** and * denote significance at 1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-test and diagnostic tests. Regressions in columns 1, 4 and 5 use Legal Origin as an instrument; regressions in columns 2 and 3 use as instruments Years under communism and Religion respectively.

Table 4.5: Disclosure Requirements and Private Credit, 1999. Instrumental Variables (IV) Estimations: First-Stage Regressions

Panel A: LEGAL ORIGIN, omitted category is French legal origin

	EXT_AUDIT_EFF	DISCLOSE_EFF	ACC_DISCREP
German	16.3714*** (5.5429)	7.8932** (3.5974)	-32.9805* (17.4043)
Socialist	4.2455 (6.2712)	3.6378 (3.9206)	-37.6956* (19.6910)
AVINFL	0.0208** (0.0089)	0.0142** (0.0063)	-0.0371 (0.0280)
STATE_BANKS98	0.1477 (0.0847)		-0.6797** (0.021)
Intercept	73.1*** (6.3243)	74.9*** (3.0090)	90.6*** (19.8577)
No of obs	21	21	21
Adjusted R-sq	0.34	0.25	0.22
F-test	F(4,16)=3.61 [0.0278]	F(3,17)=3.20 [0.0500]	F(4,16)=2.45 [0.0883]

Panel B: RELIGION: omitted category is Catholic-Protestant

	ACCOUNTING	ANTI_LAUND_EFF	EFFBANK99
Muslim	-13.4444 (11.7780)	-13.2864 (12.5599)	-11.2172* (5.9385)
Orthodox	-25.4444*** (8.3283)	-19.9625* (9.9152)	-12.0156** (4.6586)
AVINFL		-0.0278 (0.0191)	
STATE_BANKS98		0.3373* (0.1651)	
Intercept	30.8*** (5.8890)	37.7*** (7.8904)	75.8*** (3.2941)
No of obs	21	21	22
Adjusted R-sq	0.27	0.40	0.21
F-test	F(2,18)=4.67 [0.0233]	F(4,16)=4.40 [0.0137]	F(2,19)=3.78 [0.0415]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Standard errors shown in parentheses next to coefficient estimates. P-values shown in square brackets for the F-test.

Table 4.6: Banking Enforcement Indices and Private Credit, 1999. Instrumental Variables (IV) Estimations: First-Stage Regressions

	Panel A: Years under communism, omitted category is "Low number of years"		
	CONS_EXAM_EFF	ANTI_LAUND_EFF	EFFBANK99
YRCOMM_HIGH	-16.8025** (7.8052)	-43.6*** (6.9938)	-18.7787*** (5.3543)
YRCOMM_MED	-11.1875 (9.7348)	-18.6** (8.7227)	-13.4815** (5.7142)
AVINFL			0.0074 (0.0090)
STATE_BANKS98			0.0628 (0.0835)
Intercept	77.0*** (5.2035)	51.6*** (4.6625)	74.7*** (4.5389)
No of obs	22	22	20
Adjusted R-sq	0.12	0.64	0.46
F-test	F(2, 19)=2.40 [0.1176]	F(2, 19)=19.44 [0.0000]	F(5, 14)=4.23 [0.0149]

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Standard errors shown in parentheses next to coefficient estimates. P-values shown in square brackets for the F-test.

of no independent impact of the instrument on private credit. The result indicates that the instruments and the error term are correlated.

Overall, these IV results support the main OLS results, albeit with some qualifications and cautions, particularly with respect to the regression of PRIVATE99 on ACC_DISCREP.

Table 4.7: Bank Capital Adequacy and Private Credit, 1999. OLS Estimations

Indep. variable	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99
CAPADEQ_RULES	0.1188*	0.2098**		0.2349**
	(0.0656)	(0.0843)		(0.0999)
CAPADEQ_UND			0.0123	-0.1684
			(0.2888)	(0.3250)
AVINFL	-0.0182***	-0.0226***	-0.0147*	-0.0227***
	(0.0058)	(0.0068)	(0.0070)	(0.0065)
STATE_BANKS98	-0.0771		-0.1114	
	(0.1072)		(0.1023)	
PUBLIC_REG	0.1746		0.2255*	
	(0.1215)		(0.1209)	
Intercept	12.0***	10.5***	15.2	24.8
	(3.9788)	(2.8976)	(26.1704)	(27.8154)
F-test	3.03*	5.78**	1.72	4.23
	[0.0514]	[0.0115]	[0.1986]	[0.0210]
No of obs.	20	21	20	21
R-squared	0.37	0.29	0.33	0.31

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

4.5.2 Capital Adequacy

Next we test for the impact of capital adequacy regulations on private credit. As explained in the Data section, we have two LIS questions related to capital requirements, which give the two sub-indices we use as regressors. First, we have the index of CAPADEQ_RULES, which measures whether banks are required by law to establish minimum capital requirements, and whether those requirements are in accordance with the requirements imposed by the Basle Capital Accord. This is considered an extent-of-law (extensiveness) legal measure. The second measure – CAPADEQ_UND – was previously considered an enforcement measure, but as explained earlier, since it reflects the clarity of the law and the law being well understood by bank managers, and does not measure directly the application of the laws with respect to capital requirements, it is, in my opinion, more appropriate to treat it as an extent-of-law (extensiveness) measure. The results of our regressions show that it is the first variable which has a significant effect upon bank lending to the private sector (Table 4.7).

Table 4.7 shows the OLS regression results for the two legal measures of capital adequacy on PRIVATE99. First, we establish that the index of CAPADEQ_RULES, i.e. the extent of which capital requirements exist in the banking law and follow the Basle capital requirements, is found statistically significant, albeit at the 10% level only, in our basic regression model, controlling for inflation, the share of state banks and information-sharing. Among the controls, only inflation is found significant, so in the estimation in column two of Table 4.7 we report the same regression without the STATE_BANKS98 and PUBLIC_REG controls. The capital adequacy rules index increases its significance to the 5% level, and inflation retains its significance. In contrast, the legal index of clarity and understanding of the rules on capital adequacy – CAPADEQ_UND – is found insignificant in our basic model with the three controls. The controls have the expected signs and both inflation and the

public registry index are significant at the 10% level. Finally in column 4 of Table 4.7 we present an equation which estimates for the impact of the two capital adequacy indices simultaneously. The rules index again is found significant, and the understanding index is again insignificant (and has a negative sign due probably to multi-collinearity between the two – correlation coefficient is 0.40).

We interpret these results as indicating a positive association between the extent of which capital adequacy rules follow the guidelines of the Basle Accord, and private credit. Countries which have adopted minimum capital requirements, and these requirements conform to those set by the Basle Accord, are enjoying higher levels of lending to the private sector, controlling for other factors. We do not find evidence, however, that the clarity of the law or perceptions of how well capital requirements are understood by bank managers affect private credit.

These basic results are also confirmed by instrumental variables estimations, using Legal Origin and Years under communism as instruments.[15]

4.5.3 Competition Regulatory Variables

4.5.3.1 Foreign Entry

We look at the four questions which collect information about regulation of foreign ownership of banks first separately, and then in the aggregate. We find some evidence that less restrictions on the ownership stake in domestic banks allowed to foreign banks is significantly associated with the volume of private credit. We also find strong evidence that less legal restrictions on foreign ownership of domestic banks increase foreign bank entry (expressed as the share of foreign banks in the number

[15]These results are not shown to save space. They are available upon request. We tested several instrument sets, and found that Legal Origin, Years under Communism, and, to a lesser degree, Legal Transplant Status work best as instruments for CAPADEQ_RULES in the first-stage regressions, but are weak as instruments for CAPADEQ_UND.

of total banks operating in the country).

The four variables, which provide information about banking law stipulations about ownership of domestic banks by foreign firms are: FOR_RESTR_P, which measures the presence of restrictions on the percentage share of foreigners in the capital of domestic banks, allowed by law; FOR_PERM_P, which measures whether foreign ownership in domestic banks is permitted by law; FOR_LICENSE_P, measuring whether a license is required for a foreign firm to buy shares in a local bank; and FOR_LIC_DIFF_P, measuring whether licensing requirements for foreign banks are different from those for domestic banks. Since there is no underlying theory about how licensing procedures of foreign banks would affect bank lending or foreign entry, we leave it to the data to provide an answer. We also test for the impact of these provisions in the aggregate – the aggregate index is FOR_EASE_P. All these indices refer to extent of the law, so there is no enforcement index on foreign entry requirements.

The results indicate that only foreign ownership restrictions (FOR_RESTR_P) are significantly associated with PRIVATE99. The other three variables and the aggregate index are not found to be statistically significant in our basic regression model. Only FOR_RESTR_P has a significant coefficient in the standard regression, although it is not significant when all three controls are included. Successive estimations, shown in Table 4.8, dropping the insignificant state ownership and public registry variables, lead to significance of the legal variable, albeit at the 10% level only. In contrast, neither foreign ownership being permitted (FOR_PERM_P), nor the two licensing variables are significant in the same regression (output not shown). Finally, we test for the aggregate index of foreign ownership ease – FOR_EASE_P. It is found to have a positive effect on private credit, but the coefficient is not significant. Therefore, we establish only weak evidence that less foreign entry restrictions facilitate bank lending to the private sector, through encouraging more foreign bank

Table 4.8: Regulations on Foreign Bank Ownership and Private Credit, 1999. OLS Estimations

Indep. variable	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99
FOR_RESTR_P	0.2142	0.1710*	0.1763*	
	(0.1348)	(0.0937)	(0.0917)	
FOR_EASE_P				0.2261
				(0.1939)
AVINFL	-0.0164**	-0.0139*	-0.0181**	-0.0134**
	(0.0065)	(0.0071)	(0.0072)	(0.0051)
STATE_BANKS98	-0.1372			
	(0.0874)			
PUBLIC_REG	0.2329*	0.1856		0.2043*
	(0.1115)	(0.1130)		(0.1146)
Intercept	-2.7	-2.3 (7.7296)	2.0 (6.0764)	-3.3
	(11.6698)			(14.0738)
F-test	2.40*	2.31 [0.1157]	3.32*	3.33**
	[0.0959]		[0.0592]	[0.0464]
No of obs.	20	20	21	20
R-squared	0.39	0.32	0.17	0.35

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

Table 4.9: Regulations on Foreign Bank Ownership and Foreign Bank Entry: OLS Estimations

Indep. variable	FORBANK99	FORBANK99	FORBANK99	FORBANK99
FOR_RESTR_P	0.7263**	0.7311***		
	(0.2733)	(0.2490)		
FOR_EASE_P			1.3519***	1.2896***
			(0.2317)	(0.2139)
AVINFL	-0.0288*	-0.0298**	-0.0256***	-0.0298***
	(0.0157)	(0.0128)	(0.0074)	(0.0075)
STATE_BANKS98	0.0361		0.1419	
	(0.2085)		(0.1450)	
PUBLIC_REG	0.0161		0.0935	
	(0.2006)		(0.1184)	
Intercept	-28.0	-26.7	-64.1***	-52.1***
	(26.0918)	(22.2291)	(17.9929)	(14.5097)
F-test	2.61*	6.10***	9.70***	18.20***
	[0.0722]	[0.0086]	[0.0003]	[0.0000]
No of obs.	22	23	22	23
R-squared	0.31	0.31	0.73	0.69

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

Table 4.10: Regulations on Foreign Bank Ownership and Foreign Bank Entry: OLS Estimations

Indep. variable	FORBANK00_02	FORBANK00_02	FORBANK00_02	FORBANK00_02
FOR_RESTR_P	0.9647*	0.9774**		
	(0.4617)	(0.3918)		
FOR_EASE_P			1.3393***	1.3156***
			(0.2713)	(0.2630)
AVINFL	-0.0392**	-0.0413***	-0.0325***	-0.0350***
	(0.0133)	(0.0106)	(0.0104)	(0.0099)
STATE_BANKS98	0.1036		0.2514	0.2415*
	(0.2115)		(0.1476)	(0.1230)
PUBLIC_REG	-0.0054		0.0657	
	(0.2181)		(0.1446)	
Intercept	-39.4	-36.7	-54.3**	-49.8**
	(45.8842)	(37.2554)	(22.0309)	(20.6272)
F-test	3.40**	9.61***	10.35***	15.48***
	[0.0385]	[0.0016]	[0.0004]	[0.0001]
No of obs.	19	20	19	20
R-squared	0.45	0.44	0.72	0.71

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

entry.

As an alternative dependent variable we also employ the share of foreign banks in the number of domestic banks operating in 1999 (FORBANK99) and later years (FORBANK00_02) as a measure of foreign bank penetration. The results indicate that less restrictions on ownership by foreigners are significantly associated with more foreign bank entry, controlling for macroeconomic conditions, share of state banks and presence of credit information in the market. We also find that licensing requirements for foreign banks do not deter foreign entry; on the contrary, special licensing requirements (FOR_LICENSE_P) and different licensing requirements for foreign banks (FOR_LIC_DIFF_P) are found to have a positive and significant impact on foreign entry (output not shown). These results are robust to employing as dependent variables the share of foreign banks averaged over 1999 to 2002, averaged over 1999 to 2001, and averaged over 1999 and 2000. We report partial results of this set of regressions in Tables 4.9 and 4.10. Among the control variables only inflation is found significant. Notably, the share of state-owned banks in 1998 usually enters with a positive sign, which indicates that state-ownership attracts foreign entry – this result is possibly driven by opportunities for privatization of state-owned banks to foreigners.

The results are particularly strong for the aggregate index of ease of foreign ownership as given by the law (FOR_EASE_P). This index together with past inflation explains about 70% of the variation in the share of foreign banks in 1999, and in the period 2000-2002 (see Tables 4.9 and 4.10). It is worth noting that when we use the average share of foreign-owned banks for the period 2000-2002 the results on all legal variables on foreign ownership hold. We find some weak evidence (Table 4.10) that state ownership of banks in 1998 has a positive impact upon foreign entry in later years (the coefficient on STATE_BANKS98 is significant in the aggregate index regressions for 2000-2002, but not in 1999). In general, however, only inflation

exerts a consistently significant negative effect upon foreign entry. We do not show the results for the other three legal indices, but the two licensing indices are found significant for both sets of regressions, while the index of permission of foreign entry is generally insignificant.

Finally, instrumental variables estimations, using four different sets of instruments, provide limited support for the role of FOR_RESTR_P on PRIVATE99, but are generally supportive about the effect of the aggregate index of the ease of foreign ownership (FOR_EASE_P) on foreign bank entry in 1999 and thereafter (FORBANK99 and FORBANK00_02).[16]

4.5.3.2 Entry Requirements

We also investigate the impact of strict requirements for entry into banking in general. The index of entry requirements (ENTRY_REQ_P) is based on an extent-of-law (extensiveness) LIS question (question Q12; see Table 4.28 for a mapping of LIS Banking Law questions into the relevant indices and their comparison to the Barth et al. indices). Much like Barth et al. (2004), we do not find evidence of any significant impact of entry requirements on the amount of private credit. We do find some evidence that more rigorous bank entry requirements are positively associated with a larger fraction of foreign-owned banks. Therefore, rather than reducing foreign entry, stricter licensing appears to be, in fact, attracting it. We test for the average fraction of foreign-owned banks in various years, but the results are sensitive to the inclusion of the three controls. In particular, the entry requirements legal index is correlated with the state ownership of banks control variable (STATE_BANKS98) – the correlation coefficient is -0.32 – which is likely causing some multi-collinearity. Whenever STATE_BANKS98 is omitted from the regression equation, the legal variable loses significance at the standard levels. Therefore, we interpret these results

[16]These results are not reported to save space. They are available upon request.

Table 4.11: Entry Requirements, Private Credit and Foreign Bank Entry: OLS Estimations

Indep. variable	PRIVATE99		FORBANK00_02		
ENTRY_REQ_P	0.0887	0.1876	1.1809*	0.9720*	0.6809
	(0.2947)	(0.3114)	(0.5741)	(0.5025)	(0.4909)
AVINFL	-0.0153*	-0.0146*	-0.0367**	-0.0374**	-0.0400***
	(0.0079)	(0.0083)	(0.0161)	(0.0144)	(0.0108)
STATE_BANKS98	-0.1021		0.3968*	0.2841	
	(0.0960)		(0.1945)	(0.2009)	
PUBLIC_REG	0.2230*	0.1886*	-0.1086		
	(0.1203)	(0.1100)	(0.2123)		
Intercept	8.0	-3.8	-65.8	-44.1	-7.7
	(26.1494)	(27.8794)	(57.5693)	(50.3840)	(45.8216)
F-test	1.65	92.00	4.91**	4.72**	7.06***
	[0.2132]	[0.1548]	[0.0110]	[0.0152]	[0.0058]
No of obs.	20	20	19	20	20
R-squared	0.33	0.30	0.37	0.32	0.24

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

to mean that entry requirements, as proxied by the information of the LIS, do not have a significant impact upon bank lending to the private sector; the results suggest a stronger positive impact of strict legal entry requirements for banks upon the entry decisions of foreign banks, but these results are not robust to the inclusion of the three control variables. Table 4.11 provides a brief summary of these regression results.

4.5.4 Permissible Activities

We next examine how legal restrictions of permissible bank activities affect bank lending and foreign entry into banking. There are three LIS questions, which relate to scope of permissible activities – Q7, Q8 and Q9. We use three indices based on these – PERM_ACT_P, PROHIB_ACT_P and SEC_RESTR_P. The first one scores higher if a broad range of financial activities are allowed by law. The second one measures whether securities underwriting and dealing and participation in investment funds are prohibited, scoring higher if no prohibitions are stipulated. The third index measures whether banks can hold securities and whether legal restrictions on this exist. The aggregate index of permissible banking activities (ACT_RESTR_P) is the average of the three.

We do not find any evidence that restricting bank activities has any impact upon private credit. Neither of the legal measures are significant in the basic regression of PRIVATE99 with the usual controls. These results are also obtained when using private credit in 2000 (PRIVATE00) as the dependent variable.

We do find some evidence that not restricting bank holding of securities – both public and private – has a negative effect upon foreign bank entry. These results are not very robust, however, and sensitive to the inclusion of different control variables. In addition, SEC_RESTR_P becomes insignificant in the regressions for the share of foreign banks over 2000-2002 (FORBANK00_02).

Finally, we also try to see the impact of banking activities restrictions on the share of non-performing bank loans over 2000-2002 (BADLOANS00_02). We find limited evidence that lack of legal prohibitions of securities underwriting and dealing, and participation in investment funds is significantly associated with a higher share of future non-performing loans. In addition, the aggregate index of activities restrictions, ACT_RESTR_P, is positively associated with a higher fraction of non-performing loans, although the results fail the standard significance tests by a narrow margin. We do not attach much weight to these findings since the model estimating the share of non-performing loans is not properly identified.

4.5.5 Supervisory Attributes

4.5.5.1 Supervisory Powers

We explore the impact of several different supervisory powers over banks as given by the LIS. We establish that most of them have no particular impact upon private credit. However, our results suggest that anti-money-laundering regulations, and specifically their enforcement, are supportive of credit expansion and foreign entry. We also find that supervisory powers of conducting on-site examinations of banks are also associated with more private credit. Interestingly, however, more frequent on-site examinations have the opposite effect – they seem to stifle credit. Strict requirements on related lending and related party transactions, and bank powers to undertake corrective actions against banks in violation of banking laws have a generally positive, but usually insignificant effect on private credit. Finally, bank powers to grant prior approvals before certain bank actions can take place, and the frequency of supervisory corrective actions bear no impact upon private credit. These results also hold for alternative dependent variables, such as foreign bank entry.

Therefore, we get mixed evidence about the role of supervisory powers over

Table 4.12: Anti-Laundering Regulations and Private Credit: OLS Estimations

Indep. variable	PRIVATE99		
ANTI_LAUND_EXT	0.0274 (0.0647)		
ANTI_LAUND_EFF		0.2213** (1008)	0.2564*** (0.0823)
AVINFL	-0.0115 (0.0092)	-0.0057 (0.0056)	
STATE_BANKS98	-0.1272 (0.1049)	-0.1822* (0.0989)	-0.1858* (0.0946)
PUBLIC_REG	0.2266* (0.1198)	0.1971* (0.1112)	0.1970* (0.1071)
Intercept	14.9 (4.6940)	10.7** (4.1313)	8.9*** (2.7085)
F-test	1.97 [0.1503]	4.11** [0.0192]	4.83** [0.0140]
No of obs.	20	20	20
R-squared	0.34	0.43	0.42

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

banks. Table 4.12 presents the results of OLS regressions of PRIVATE99 on the two legal anti-laundering indices, ANTI_LAUND_EXT and ANTI_LAUND_EFF[17], and the usual control variables. The results indicate that the enforcement of anti-money-laundering legal rules matters for private credit – it is statistically significant and has a positive coefficient. The extent-of-law measure, i.e. whether banking laws contain provisions against money-laundering, is not significant. We must stress that the two legal measures and inflation are highly negatively correlated – in an attempt to correct for multi-collinearity, we have also tested for the impact of each of the two legal indices on the residual of PRIVATE99 after regressing it on inflation and a constant. The results hold through – ANTI_LAUND_EXT is not significant,

[17]The two are highly correlated, and not included in a regression simultaneously.

Table 4.13: On-Site Examinations and Private Credit: OLS Estimations

Indep. variable	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99
EXAM_EXT_P	0.0952	0.1221*	0.1661**			
	(0.0762)	(0.0673)	(0.0638)			
EXAM_FREQ_P			-0.2934***	-0.2513**	-0.3355***	
			(0.0906)	(0954)	(0916)	
PROF_EXAM_P					0.1212**	0.0710
					(0.0419)	(0.0428)
AVINFL	-0.0120*	-0.0099*	-0.0115**	-0.0160*	-0.0149***	-0.0138**
	(0.0058)	(0.0048)	(0.0050)	(0.0083)	(0.0049)	(0.0053)
STATE_BANKS98	-0.0867		-0.1881**	-0.2150**	-0.1895**	
	(0.1099)		(0.0731)	(0.0816)	(0.0793)	
PUBLIC_REG	0.2342*	0.2091*	0.2697**	0.2502**	0.2591**	0.1827
	(0.1236)	(0.1183)	(0.1082)	(0.1051)	(0.0962)	(0.1116)
Intercept	6.3	1.3	12.4*	28.0***	22.5***	9.7**
	(9.6677)	(7.2554)	(6.8064)	(5.3545)	(4.8844)	(3.6690)
F-test	2.30	3.20*	4.58**	3.84**	6.50***	3.33**
	[0.1065]	[0.0518]	[0.0110]	[0.0241]	[0.0021]	[0.0447]
No of obs.	20	20	20	20	21	21
R-squared	0.36	0.33	0.58	0.51	0.62	0.30

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

while ANTI_LAUND_EFF is (results are not reported). We also find evidence that both measures have a significant positive impact upon foreign bank entry in the period 2000-2002 (results not reported here). Therefore, unlike for private credit, the extent of the law with respect to preventing money laundering, as captured by the LIS, is found significant for foreign banks entry. Finally, we do not find any significant relationship between the share of non-performing bank loans over the period 2000-2002, and the two legal measures.

We next report the results on another aspect of bank powers – supervisory authority to conduct on-site bank examinations (Table 4.13). We consider three elements of this: whether bank supervisors are legally empowered to conduct on-site examinations, which measures the extent of the law (EXAM_EXT_P); the frequency with which supervisors enter banks in practice and conduct such examinations, which we call EXAM_FREQ_P; and the availability of experienced professionals in the supervisory agency, who can conduct such examinations effectively (PROF_EXAM_P). We consider the first of these indices as an extent-of-law (extensiveness) measure, while the other two are enforcement-related (effectiveness-related). The results for their impact upon private lending indicate that having legal provisions, which empower bank supervisors to conduct on-site examinations of banks, is positively associated with private credit, while more frequent on-site supervisory examinations are associated with less private credit. The results are statistically significant. Therefore, the evidence seems to tell, that while on-site examinations can be beneficial in monitoring banks, their over-use can be harmful for credit market outcomes. If the frequency measure is a proxy for real banking powers, then this is in line with the findings of Barth et al. (2004) about the negative effects of extensive supervisory powers. Indeed, more frequent visits may actually reflect regulatory capture or corruption, and thus lead to less rather than more credit expansion. In addition, our equation may suffer from selection bias since more visits may

be associated with more troubled banks, which lend less. There may be self-selection in this case. The results hold for an equation which includes both EXAM_EXT_P and EXAM_FREQ_P simultaneously (the two are not highly correlated). Finally, the availability of professional examiners is positively associated with private credit, but the result is sensitive to the specification and the control variables included. In particular, PROF_EXAM_P is correlated with STATE_BANKS98, which induces multi-collinearity, and can account for the significant coefficient of PROF_EXAM_P in column 4 of Table 4.13. Dropping the state bank variable, leads PROF_EXAM_P to just miss significance at the 10% level.

We do not report the results on the effect of other supervisory powers granted by the law, such as prior approvals, restrictions on related lending and ability to undertake corrective actions since none is found significant in the standard regressions for private credit.[18] Moreover, these variables are not found significant for alternative dependent variables such as foreign bank entry and share of non-performing loans over the period 2000-2002. Perhaps, the most surprising finding is that corrective actions and their use in practice have not been found to affect private credit, as initially expected.

Finally, IV regressions for ANTI_LAUND_EFF and EFFBANK99 (which is a composite index of the two disclosure effectiveness indices and two of the Supervisory

[18]The LIS index of supervisory powers to undertake corrective actions against banks (based on question Q31) barely misses significance at the 10% level in the standard regression of PRIVATE99, controlling for inflation and the availability of a public credit registry, and has a positive sign. This is in contrast to Barth et al. (2004), where their index of Prompt Corrective Power has a negative, but insignificant effect on private credit when not controlling for other supervisory variables. The differential impact of their and our indices – despite a positive correlation of 0.43 – may be due to different coverage, e.g. the BCL index measures whether the law establishes pre-determined levels of bank solvency deterioration which can force automatic supervisory intervention. Our index measures what types of corrective actions bank supervisors are authorised to undertake against banks which violate the banking laws or their own procedures.

Powers indices, i.e. EXT_AUDIT_EFF and CONS_EXAM_EFF, ANTI_LAUND_EFF and PROF_EXAM) confirm the OLS results for ANTI_LAUND_EFF and that enforcement components of disclosure and supervisory powers matter. First-stage regressions (see Panel B of Table 4.5 and Table 4.6) showed earlier that both Religion and Years under communism work well for both these variables. Table 4.14 reports the second-stage results.

4.5.5.2 Supervisory Independence

Finally, we also examine the impact of bank supervisory independence and private credit provision. We do not have very rich data on independence, and rely on two variables: SUP_INDEP_P, which measures whether there is bank regulator (supervisor), and whether it is independent, and on INDEP_EVAL_P, which measures the frequency with which bank supervisors make independent evaluations of bank practices and procedures for granting of loans and making investments. The first is an extent-of-law (extensiveness) variable, while the second is concerned with enforcement of the law (effectiveness measure). We find only limited evidence that higher independence of the bank supervisory authority results in higher private credit. We find no association between independent supervisory evaluations of bank activities and private credit (results not reported for space considerations).

These results should be taken with caution since our measure of independence is based on a single question and probably not well designed to capture the different aspects of institutional independence of the supervisory agency. We report some of the regression results of PRIVATE99 on SUP_INDEP_P (Table 4.15). Since SUP_INDEP_P and AVINFL are correlated (0.41), we show some specifications without inflation. Controlling for inflation makes SUP_INDEP_P insignificant. So does using the usual two-step procedure through employing as a dependent variable the residual of a regression of PRIVATE99 on AVINFL. Therefore, we conclude that al-

Table 4.14: Instrumental Variables (IV) Estimations of Enforcement-Related Banking Indices Using 2SLS and Religion and Years under Communism as instruments

Indep. variable	PRIVATE99	PRIVATE99	PRIVATE99	PRIVATE99
	Instrument: Years under communism		Instrument: Religion	
ANTI_LAUND_EFF	0.3381**		0.9029**	
	(0.1193)		(0.4125)	
EFFBANK99		0.6990**		1.5658***
		(0.2517)		(0.5341)
AVINFL		-0.0104**	0.0234	
		(0.0042)	(0.0221)	
STATE_BANKS98		-0.2084*	-0.3171	
		(0.1079)	(0.2216)	
PUBLIC_REG		0.1877*		
		(0.0937)		
Intercept	4.8 (2.7975)	-28.1*	-8.0	-92.0**
		(15.4308)	(13.2365)	(36.2982)
No. of obs.	22	20	21	22
F-test (1st stage)	F(2, 19)=19.44 [0.0000]	F(5, 14)=4.23 [0.0149]	F(4, 16)=4.40 [0.0137]	F(2, 19)=3.78 [0.0415]
Hausman test	2.15 [0.1429]	0.03 [0.8593]	6.02 [0.0142]	9.14 (0.0025)
OIR test (Sargan test)	$\chi^2(1)$ =0.001. [0.9809]	$\chi^2(1)$ =0.434 [0.5102]	$\chi^2(2)$ =1.380 [0.2402]	$\chi^2(2)$ =0.425 [0.5143]

Note: ***, ** and * denote significance at 1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-test and diagnostic tests.

Table 4.15: Supervisory Independence and Private Credit: OLS Estimations

Indep. variable	PRIVATE99			(4)
SUP_INDEP_P	0.1038	0.1934	0.1890*	0.0783
	(0.1478)	(0.1195)	(0.0990)	(0.1154)
AVINFL	-0.0134			
	(0.0081)			
STATE_BANKS98	-0.1127	-0.0826		-0.1212
	(0.1039)	(0.0948)		(0.0957)
PUBLIC_REG	0.2031	0.2025	0.1655	0.2033
	(0.1227)	(0.1219)	(0.1143)	(0.1184)
Intercept	10.5	2.1 (7.8247)	0.8 (5.8362)	-5.4 (8.0156)
	(11.4275)			
F-test	2.82* [0.0601]	2.57* [0.0883]	3.92**	1.48 [0.2552]
			[0.0377]	
No of obs.	21	21	22	21
R-squared	0.33	0.27	0.26	0.23

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets. Equation (4)'s dependent variable is the residual from an OLS regression of PRIVATE99 on AVINFL and a constant.

though supervisory independence appears to have a positive effect on private credit, this effect is not robust to controlling for past inflation. Table 4.15 shows some of the regression results on supervisory independence.

The results on the supervisory independence legal measures also hold for regressions using private credit in 2000, and FORBANK00_02 as dependent variables.

4.6 Robustness Checks

4.6.1 Alternative dependent variables

As explained in Section 4.3, we test the robustness of our main results by using alternative measures of bank development in the transition economies. The two measures we consider are the share of liquid liabilities of banks and non-bank financial intermediaries in GDP (LIQUID99), and the ratio of commercial bank domestic assets and the sum of commercial bank and central bank domestic assets (COMMERCIAL99). The former measures financial depth, while the latter measures the degree to which commercial banks rather than the central bank allocate society's savings. We have re-run our OLS and IV regressions from the previous section, using the share of liquid liabilities of banks and non-bank financial intermediaries in GDP. Our main results hold through. Thus, we find that the effective disclosure of bank information through consolidated supervisory examinations and the use of external auditing firms in the preparation of financial information both maintain a significant and positive effect on financial development as proxied by LIQUID99 and using the regular control variables such as average inflation, the share of state banks in 1998 and the index of public credit registry. We also find, as in the private credit regressions, that who writes the country's accounting rules – be it the government, or the professional community, or both – matters for LIQUID99. More independent accounting rules-writing, as captured by higher values of the ACCOUNTING

Table 4.16: Selected Banking Law Indices and Liquid Liabilities, 1999. OLS Estimations

Indep. variable	LIQUID99	LIQUID99	LIQUID99	LIQUID99	LIQUID99	LIQUID99	LIQUID99
EXT_AUDIT_EFF	0.5885**						
	(0.2320)						
CONS_EXAM_EFF		0.3878*					
		(0.2043)					
ACCOUNTING			0.2858**				
			(0.1206)				
CAPADEQ_RULES				0.2906**			
				(0.1012)			
FOR_EASE_P					0.5988**		
					(0.2718)		
ANTI_LAUND_EFF						0.4783***	
						(0.1231)	
EFFBANK99							0.8886***
							(0.1952)
AVINFL	-0.0424***	-0.0305**	-0.0272**	-0.0428***	-0.0375***	-0.0102	-0.0259***
	(0.0118)	(0.0138)	(0.0119)	(0.0086)	(0.0077)	(0.0071)	(0.0086)
Intercept	-21.2	3.5	24.4***	20.1***	-12.3	11.5**	-32.0**
	(19.3306)	(16.6016)	(6.0791)	(3.8244)	(19.9173)	(4.3193)	(14.9163)
F-test (2, 19)	7.93***	7.90***	19.91***	14.70***	12.58***	22.32***	25.30***
	[0.0031]	[0.0032]	[0.0000]	[0.0001]	[0.0003]	[0.0000]	[0.0000]
No of obs.	22	22	22	22	22	22	22
R-squared	0.38	0.41	0.36	0.42	0.48	0.57	0.55

Note: ***, ** and * denote significance at1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets.

index, is significantly associated with higher values of LIQUID99. Similarly to the PRIVATE99 regressions, we also find evidence that adoption of internationally accepted capital adequacy requirements – measured by the CAPADEQ_RULES index – significantly increases the share of liquid liabilities. As in the previous section, the results also indicate that the ease of foreign bank ownership supports local financial market development – indeed, the index of foreign ownership ease (FOR_EASE_P) is also positively and significantly associated with higher LIQUID99. The earlier results on the impact of effective anti-money-laundering banking law provisions (ANTI_LAUND_EFF) on PRIVATE99 are also corroborated by the LIQUID99 regression results. The enforcement of anti-money-laundering legal rules is positively and significantly associated with a higher share of liquid liabilities of the financial system. Finally, EFFBANK99 – i.e. the enforcement of banking laws on consolidated examinations, external auditing, anti-money laundering and the presence of professional bank supervisors – are also significantly and positively associated with financial development.

These results hold for both OLS and IV regressions, using legal transplant dummies as instruments for the legal variables. Interestingly, among the control variables only inflation (AVINFL) is found significant; the share of state ownership of banks in 1998 and the index of public credit registry are not found significant for liquid liabilities.

We present a summary of the main results for LIQUID99 in Table 4.16.

Some of the other banking law indices are also found significant. For instance, unlike in the private credit regressions the index of entry requirements (ENTRY_REQ_P) is found significant at the 10% level. In line with the private credit regressions, we also find that more frequent bank examinations by supervisors (EXAM_FREQ_P) are significantly associated with worse rather than better financial outcomes. Just like in the regressions for foreign bank entry, both the extent of law with re-

spect to money laundering activities (ANTI_LAUND_EXT), and its enforcement (ANTI_LAUND_EFF) have a positive and significant impact upon liquid liabilities as percent of GDP in 1999. We also check for the significance of the ingredients of foreign ownership ease (FOR_EASE_P), which is found highly significant. We find that less restrictions on the percentage of domestic bank ownership by foreign banks – i.e. higher values of FOR_RESTR_P – are associated with higher liquid liabilities. It is this component of foreign ownership ease, which drives the earlier results of FOR_EASE_P.

4.6.2 Controlling for GDP per capita

The results reported thus far do not take into account GDP per capita. However, as discussed in Chapter 3, GDP per capita affects both financial development and institutions. Earlier studies have been able to show that countries with higher GDP per capita have better developed financial systems, and also have established better institutions. Furthermore, more financial development may trigger more institutional or legal development. As in Chapter 3, we isolate the effect of GDP per capita by running a regression of financial development (PRIVATE99, LIQUID99) on the logarithm of GDP per capita and a constant term, and then use the residuals from this regression to test for the effect of our legal indices and the inflation, state-owned bank share and public credit registry index control variables. Table 4.17 briefly summarises the main results of the two-step procedure. We find evidence that better rules on financial disclosure by banks, as captured by the index of DISCLOSE_EFF, are robust to correcting for GDP per capita. Less restrictions on foreign bank ownership – i.e. higher values of the FOR_RESTR_P – are also robustly related to PRIVATE99, after controlling for GDP per capita. This, the results for the effect of effective information disclosure and less legal restrictions on foreign bank ownership are robust to controlling for GDP per capita in the private

Table 4.17: Private Credit and Liquid Liabilities after Controlling for GDP Per Capita, 1999. OLS Estimations

Indep. variable	(1)	(2)	(3)	(4)	(5)
DISCLOSE_EFF	0.3035*				
	(0.1669)				
FOR_RESTR_P		0.1735**	0.4920***		
		(0.0652)	(0.0884)		
FOR_EASE_P				0.5767***	
				(0.1529)	
ANTI_LAUND_EFF					0.2117*
					(0.1181)
AVINFL			-0.0153**	-0.0147**	-0.0021
			(0.0055)	(0.0052)	(0.0077)
STATE_BANKS98	-0.0907*	-0.1126**			
	(0.0506)	(0.0491)			
Intercept	-21.8	-12.5**	-43.2***	-39.4***	-6.6
	(14.0801)	(5.0033)	(6.0091)	(10.4788)	(5.6100)
F-test	6.20***	5.43**	16.22***	7.58***	5.15**
	[0.0089]	[0.0143]	[0.0001]	[0.0038]	[0.0163]
No of obs.	21	21	22	22	22
R-squared	0.19	0.22	0.42	0.50	0.21

Note: ***, ** and * denote significance at 1%, 5%, and 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values for F-tests shown in square brackets. Regressions (1) and (2) have as a dependent variable the residual of an OLS regression of PRIVATE99 on the log of GDP per capita and a constant. Regressions (3), (4) and (5) have as a dependent variable the residual of an OLS regression of LIQUID99 on the log of GDP per capita and a constant.

credit regressions. The latter two-step procedure of isolating the impact of GDP per capita rests on the assumption that GDP per capita and the legal variables are not correlated, which is not the case here. Hence, we have also run all these regressions for PRIVATE99 and LIQUID99 with the log of GDP per capita among the explanatory variables, but note the presence of multi-collinearity.[19]

4.7 Conclusions

The present chapter investigated the impact of various aspects of banking laws and their application through bank supervision on the availability of private credit in the transition economies. It utilised data from the Banking Law section of the 1999 EBRD Legal Indicator Survey. One of the important, and original, features of this chapter was to query the robustness of some of the findings of Barth et al. (2004) – namely their strong claim that greater supervisory powers weaken rather than strengthen banking development.

The LIS data on banking law and its enforcement differ from the Barth et al. (2004) data. Indeed, as carefully outlined for each group of legal variables in Section 4.3, this chapter demonstrates the difficulties in obtaining robust measures of banking law and regulatory features. The in-depth look at the Barth et al. (2004) measures is very useful in identifying four groups of LIS variables depending on their

[19]The results of Table 4.17 hold. For example, in the regressions of PRIVATE99 we find that DISCLOSE_EFF and FOR_RESTR_P are significant at 5% in the presence of GDP per capita, inflation and the state bank share controls. The public registry index is never significant and is dropped. Similarly, in the LIQUID99 regressions we find that the indices of ANTI_LAUND_EFF, FOR_EASE_P and FOR_RESTR_P are highly significant at 1% in the presence of log GDP per capita and the usual controls. The index of capital adequacy rules (CAPADEQ_RULES) is also robust to inclusion of GDP per capita in the liquid liabilities regressions. The log of GDP per capita is significant at 1% in all cases. These results are not reported for brevity. They are available upon request.

degree of correlation with supposedly similar Barth et al. (2004) variables.

- One group of LIS and BCL banking law and supervision variables, which measure similar banking legal and regulatory concepts, display a high or, at a minimum, a moderate positive correlation. This group includes the aggregate indices related to Information Disclosure and Private Monitoring of Banks, where the correlation between the BCL and LIS aggregate indices is 0.29; and the aggregate indices of Supervisory Powers (with a statistically significant correlation between the BCL and LIS indices of 0.59) and Supervisory Corrective Actions (with a correlation coefficient of 0.43). It also includes the indices of foreign bank entry restrictions, where the correlation coefficients between two of the four LIS measures on foreign bank entry restrictions and permissions (FOR_RESTR_P and FOR_PERM_P) and the BCL counterpart measure of FOREIGNLIMITS are -0.51 and -0.52 respectively, and the negative association is expected since the two measure restrictions in opposite ways, i.e. the BCL measure assigns higher values to more restrictions, and the LIS does vice versa).

- A second group of BCL and LIS measures, which are similar in content, are also positively correlated, but the degree of association is lower, i.e. the correlation coefficients are around 0.15 to 0.25. Examples are our two capital adequacy measures and the BCL Overall Capital Stringency index, as well as the BCL and LIS measures related to Permissible Activities for banks.[20]

- In a third group of measures, however, the observed correlation of allegedly similar LIS and BCL variables is negative. An example would be the legal

[20]In the latter case, the correlation is negative (-0.24), but this is expected since the BCL index assigns higher values for more restrictions, whereas the LIS indices assign higher values for less legal restrictions.

measures related to supervisory independence (the correlation coefficient is -0.26).

- Finally, in a fourth group of variables, there is a very low or almost zero correlation between the BCL and LIS variables, which are purportedly measuring the same banking law features. These include the Entry into Banking indices (correlation coefficient of 0.14 or less) as well as some of the sub-indices of the different aggregate measures.

We can expect to compare our results to those of Barth et al. (2004) only in those cases where our and their measures of banking law and supervision have a high or, at a minimum, a moderate positive correlation, and there is a sufficient degree of overlap in the actual content of the indices being compared. When there is virtually no correlation, or a very low correlation between similar variables, a comparison of estimated regression results is not very useful. Since the variables are not well correlated, we would expect them to have different effects on the same dependent variables, but we cannot say which is the relevant effect. The same applies when the LIS and BCL variables display a moderate degree of negative correlation (except those cases where the two measure the same concept in different directions).

In general, this chapter has two central findings: 1) better private monitoring of banks is associated with better banking development, and 2) more supervisory powers to conduct on-site examinations of banks and to enforce anti-money-laundering rules are also associated with better banking outcomes. Other supervisory powers, however, are found largely irrelevant. It is fortunate that these two are the types of variables with the highest or a reasonably high positive correlation with the BCL counterpart measures, so we can compare the results. My results on private monitoring are generally supportive of the Barth et al. (2004) and Beck et al. (2003c) findings that better enforcement of information disclosure rules is associated with better banking market outcomes, most likely through better private monitoring of

banks. Thus, we establish that the use of external auditors by banks for their annual financial statements as well as the frequency with which bank supervisors examine banks on a consolidated basis are significantly associated with higher levels of private credit, controlling for inflation, availability of information on borrowers, and the share of state banks. The results also indicate that the determination of national accounting rules by the accounting community rather than the government also raises private credit. Furthermore, we establish that document disclosure to supervisors by banks is not significantly associated with higher private credit; when it is interacted with the use of external auditors by banks, however, the composite index of disclosure attains significance.

However, in terms of supervisory agency powers, we get some results – albeit not conclusive – which contrast the findings of Barth et al. (2004). First, our results show that more powers directed at anti-money laundering and their effective application by bank supervisors are associated with more private credit, and attract foreign banks. Second, we find some evidence that supervisory authority for conducting on-site examinations of banks is associated with better, rather than worse outcomes. In support of the latter finding, the results also show that more professional bank supervisors are also positively linked to private lending. These results are different from the ones on the effects of supervisory powers reported by Barth et al. (2004), who find a negative but insignificant effect of the index of Official Supervisory Powers on private credit. Unfortunately, the comparison between the effects of the BCL index and our composite measure of Supervisory Powers will not work in this case despite the high positive correlation between the two. As mentioned earlier, this correlation may be spurious since the two index components are found – upon a closer inspection – to be quite different. In fact, Barth et al. (2004) acknowledge that their index of Official Supervisory Powers is subject to limitations and does not contain information about some important bank supervisors' powers.

For instance, our sub-indices of on-site examinations and their frequency are two elements the that the their index is lacking, and we find that these two elements appear to be affecting banking outcomes in a significant manner (positively and negatively, respectively). Importantly, the frequency of bank on-site examinations does not necessarily and exclusively represent supervisory power. More frequent bank supervisory on-site examinations are found to reduce private credit significantly – however, we conjecture that this result may be due to self-selection – in the sense that a higher frequency of examination is associated with worse banks to begin with. The latter finding should be explored further. In terms of corrective actions, where the BCL and LIS measures are positively correlated, we find a positive impact on private credit, which just misses significance; in contrast, Barth et al. (2004) find a negative impact of their index on private credit when not controlling for other supervisory variables. As mentioned earlier, the differential impact may be due to the different content of the BCL and LIS measures.

In terms of legal rules on foreign bank ownership, our results are in line with previous studies, which find that less restrictions on foreign bank entry are associated with better banking outcomes and more credit expansion. Thus, our results show that less restrictions on the share of ownership by foreign banks in domestic banks – as prescribed by the law – are associated with significantly higher volumes of private credit, and a higher penetration of foreign banks into the domestic banking market. Overall, the indications are that a more competitive banking market – as characterised by lower barriers to foreign entry – allows for credit expansion. Our indices of foreign bank ownership are well correlated (negatively since they are measured in opposite directions) – and for two of the four LIS indices the correlation with the BCL measure is high at -0.51 and -0.52. In line with this, the effects are as expected: Barth et al. (2004) find a significant negative effect of more restrictions on foreign bank ownership (captured by higher index values) on bank development

measures; we find a significant positive impact of less restrictions (higher index values) upon bank development.

For the second group of BCL and LIS variables – where we observe a limited positive correlation between the BCL and LIS measures – we find that bank capital adequacy rules appear to play a supportive role for private credit, possibly through reducing bank managers' incentives for high-risk-taking activities, and promoting bank stability. Our results show that adherence to the Basle Capital Adequacy Rules is significantly associated with more private credit in the economy. In contrast, Barth et al. (2004)'s results are not very robust: the Capital Stringency index is found negatively but insignificantly related to private credit in the presence of other controls and banking law regressors; in separate IV regressions, however, it has a positive and significant effect on private credit. So, their evidence on its impact is somewhat inconclusive.[21] In addition, the BCL and LIS indices of measuring restrictiveness of bank activities and mixing banking and commerce (which display a negative correlation at -0.24, but measure restrictiveness in opposite directions) are also found to have different impacts on bank development. For instance, I find that the index of restricting bank activities (ACT_RESTR_P) is not associated with private credit and the other bank development measures. In contrast, Barth et al. (2004) find that their index reduces private credit significantly and raises the likelihood of banking crises. It could be the case that their larger sample allows them to pick up more variation in both the dependent and explanatory variables. Clearly, further work on this is necessary.

In terms of supervisory independence – which is the only variable with a negative correlation between the BCL and LIS measures – we find some limited and not very robust evidence of a positive effect of independence on private credit. Barth et

[21] We must note that Barth et al.'s Capital Stringency Index has a wider scope than our CAPADEQ_RULES index, but certain components of the Capital Stringency Index do not display much variation among the transition countries.

al. (2004) find that their measure of supervisory independence is not related to bank development variables, although their IV regressions estimate a positive and significant effect of supervisory independence on private credit. Since our measure is very limited and based on a single question, and potential weaknesses in the BCL independence measure were outlined in Section 4.3, both the Barth et al. (2004) and our results are very tentative.

Finally, in terms of banking entry requirements, where the association between BCL and LIS is positive, but very low (0.14), we find that more comprehensive entry rules do not affect private credit, but may have a positive impact on foreign entry. Barth et al. (2004) establish that tighter entry rules raise banks' overhead costs, but have no effect on bank development outcomes. Given the low degree of correlation, it is somewhat surprising that similar effects on private credit emerge.

Altogether, we do not find results entirely supportive of recent findings by Barth et al. (2004) that supervisory powers are associated with less banking development. These results on the effects of supervisory powers can benefit from further research. We do find strong evidence, however, that supervision through better enforcement of information disclosure rules does lead to more credit and a more open banking market – a finding which is consistent with Barth et al. (2004) and other previous research.

Appendix 4.A Data Tables

Table 4.18: Definition of Variables

Variable	Description
PRIVATE99	Bank Credit to the Private Sector, % of GDP, 1999.
FORBANK99	Share of foreign banks in the number of total banks, 1999.
FORBANK00_02	Share of foreign banks in the number of total banks, 2000-2002.
LIQUID99	Liquid liabilities of banks and non-banks, % of GDP, 1999.
AVINFL	Average annual rate of inflation, 1994-1999.
STATE_BANKS98	Share of total bank assets, held by government banks, 1998.
PUBLIC_REG	Index of a public credit registry and the scope of its information.
EXT_AUDIT_EFF	Index of actual use of external auditors by banks.
CONS_EXAM_EFF	Index of use of consolidated examinations of banks by supervisors.
ACCOUNTING	Index of accounting rules writing (extent of law).
ACC_DISCREP	Index of discrepancy between local acc. standards and IAS.
DISCLOSE_EFF	Index of effective document disclosure by banks.
CAPADEQ_RULES	Index of extensiveness of capital adequacy rules.
CAPADEQ_UND	Index of understanding of capital adequacy rules by bank managers.
FOR_RESTR_P	Index of restrictions on foreign ownership share of domestic banks.
FOR_EASE_P	Index of ease of foreign ownership of domestic banks.
ANTI_LAUND_EXT	Index of extensiveness of anti-money-laundering rules for banks.
ANTI_LAUND_EFF	Index of enforcement of anti-money-laundering rules for banks.
EXAM_EXT_P	Index of bank powers to conduct on-site examinations of banks.
EXAM_FREQ_P	Index of frequency of bank on-site examinations.
PROF_EXAM_P	Index of professional bank supervisors /on-site examiners.
SUP_INDEP_P	Index of supervisory authority independence.

Note: All legal indices are as of 1999. Sources: World Development Indicators 2003, World Bank (2004b); EBRD Transition Reports, various issues; World Bank Doing Business Database, World Bank (2004a).

Table 4.19: Definition of Variables

Variable	Description
PRIVATE00	Bank Credit to the Private Sector, % of GDP, 2000.
COMMERCIAL99	Ratio of domestic commercial bank assets over the sum of central and commercial bank assets.
BADLOANS00_02	Share of non-performing bank loans, 2000-2002, %.
LGDPPC99	Logarithm of GDP per capita, 1999.
CONS_STAT_EXT	Index of requirements for issue of consolidated statements by banks.
MAND_AUDIT_EXT	Index of mandatory annual audits for banks.
DOCUMENT_DISCL	Index of requirements for document disclosure by banks.
FOR_PERM_P	Index of permission of foreign ownership of domestic banks.
FOR_LICENSE_P	Index of requirements for a license to buy shares in domestic banks.
FOR_LIC_DIFF_P	Index of differences in licensing for foreign and domestic banks.
ENTRY_REQ_P	Index of document requirements for entry into banking.
PERM_ACT_P	Index of permitted activities for banks.
PROHIB_ACT_P	Index of prohibited activities for banks.
SEC_RESTR_P	Index of restrictions on bank securities activities.
ACT_RESTR_P	Average of PERM_ACT_P, PROHIB_ACT_P, ACT_RESTR_P.
INDEP_EVAL_P	Index of frequency of independent supervisory evaluations of banks.
EFFBANK99	Index of enforcement of banking laws, average of EXT_AUDIT_EFF, CONS_EXAM_EFF, ANTI_LAUND_EFF and PROF_EXAM_P.

Note: All legal indices are as of 1999. Sources: World Development Indicators 2003, World Bank (2004b); EBRD Transition Reports, various issues; World Bank Financial Structure Database.

Table 4.20: Banking Variables by Country

Country	PRIVATE99	FORBANK99	FORBANK00_02	LIQUID99
Albania	2.1	84.6	92.3	38.9
Armenia	5.8	34.4	40.7	10.5
Azerbaijan	n.a.	7.1	8.9	4.4
Belarus	9.3	11.1	31.1	12.4
Bulgaria	14.0	64.7	74.1	28.3
Croatia	22.1	24.5	51.6	39.9
Czech Republic	42.3	64.3	67.9	64.8
Estonia	26.0	42.9	57.1	31.3
FYR Macedonia	10.4	21.7	35.0	8.5
Georgia	5.8	25.0	24.2	3.0
Hungary	25.8	67.4	75.1	44.1
Kazakhstan	7.4	32.7	n.a.	9.9
Kyrgyzstan	3.0	21.7	27.4	12.4
Latvia	16.0	52.2	61.2	25.7
Lithuania	11.1	30.8	34.4	20.4
Moldova	11.1	50.0	56.7	19.7
Poland	18.7	50.7	70.6	39.4
Romania	8.1	55.9	71.3	21.22
Russian Federation	10.9	2.4	2.7	9.5
Slovak Republic	40.5	44.0	70.9	60.1
Slovenia	38.0	16.1	23.2	43.5
Ukraine	8.6	9.3	n.a.	14.5
Uzbekistan	n.a.	14.3	n.a.	n.a.

Sources: EBRD Transition Report 2003, World Development Indicators (WDI), 2003.

Table 4.21: Economic and Legal Variables by Country

Country	STATE_BANKS98	PUBLIC_REG	EXT_AUDIT_EFF	CONS_EXAM_EFF
Albania	85.6	0	81.25	81.25
Armenia	5.7	0	75.00	75.00
Azerbaijan	65.5	0	100.00	50.00
Belarus	59.5	42	100.00	75.00
Bulgaria	56.4	47	94.64	80.77
Croatia	37.5	0	83.33	80.56
Czech Republic	18.6	60	89.58	45.83
Estonia	7.8	n.a.	100.00	82.14
FYR Macedonia	1.4	42	75.00	58.33
Georgia	0.0	0	100.00	50.00
Hungary	9.8	0	95.83	87.50
Kazakhstan	23.0	0	90.00	65.00
Kyrgyzstan	10.4	0	91.67	25.00
Latvia	8.5	0	81.25	56.25
Lithuania	44.4	63	100.00	50.00
Moldova	0.3	0	81.25	75.00
Poland	48.0	0	96.43	75.00
Romania	75.3	59	79.17	66.67
Russian Federation	41.9	0	88.16	59.72
Slovak Republic	50.0	48	100.00	94.44
Slovenia	41.3	60	100.00	100.00
Ukraine	13.7	0	64.29	57.14
Uzbekistan	67.3	0	100.00	68.75

Sources: EBRD Transition Report 2003, World Bank Doing Business Database, World Bank (2004a); EBRD 1999 Legal Indicator Survey and author's compilations.

Table 4.22: Banking Law Variables by Country

Country	ACCOUNTING	CAPADEQ_RULES	FOR_EASE_P	ANTI_LAUND_EFF	PROF_EXAM_P
Albania	25.00	33.33	83.33	58.33	58.33
Armenia	0.00	16.67	75.00	0.00	100.00
Azerbaijan	0.00	11.11	60.42	0.00	100.00
Belarus	0.00	0.00	45.83	0.00	-66.67
Bulgaria	7.00	66.67	78.17	68.75	54.17
Croatia	39.00	17.20	70.92	47.22	66.67
Czech Republic	9.00	61.67	89.18	58.33	66.67
Estonia	43.00	55.56	72.02	60.71	76.19
FYR Macedonia	0.00	50.00	54.17	25.00	100.00
Georgia	0.00	100.00	87.50	0.00	100.00
Hungary	33.00	65.15	91.73	59.62	86.11
Kazakhstan	10.00	4.17	71.25	10.00	66.67
Kyrgyzstan	17.00	50.00	73.61	37.50	66.67
Latvia	38.00	29.17	80.21	25.00	16.67
Lithuania	0.00	50.00	66.67	33.33	44.44
Moldova	13.00	25.00	79.17	12.50	58.33
Poland	21.00	33.33	70.83	50.00	61.90
Romania	25.00	40.56	80.42	58.33	55.56
Russian Federation	3.00	12.50	52.07	20.00	78.33
Slovak Republic	11.00	42.86	90.08	55.56	62.96
Slovenia	83.00	66.67	47.92	33.33	100.00
Ukraine	0.00	33.33	60.42	-3.13	47.62
Uzbekistan	38.00	11.11	67.19	12.50	16.67

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 4.

Table 4.23: Economic and Legal Variables by Country

Country	PRIVATE00	COMMERCIAL99	BADLOANS00-02	ACT_RESTR_P	EFFBANK99
Albania	2.9	69.1	18.4	50.22	75.00
Armenia	7.1	84.8	6.3	28.00	63.64
Azerbaijan	n.a.	47.8	..	46.52	63.64
Belarus	n.a.	76.4	11.8	5.67	57.58
Bulgaria	11.6	65.3	9.7	37.15	81.21
Croatia	27.8	99.6	15.4	53.77	74.24
Czech Republic	36.6	95.1	14.1	33.13	65.91
Estonia	25.5	99.7	1.1	35.94	84.20
FYR Macedonia	10.5	80.6	42.2	46.52	62.12
Georgia	6.5	29.9	7.9	27.78	63.64
Hungary	30.2	62.1	3.5	33.80	85.33
Kazakhstan	10.6	60.7	..	31.33	64.24
Kyrgyzstan	2.2	31.0	14.5	35.41	55.30
Latvia	19.5	93.1	3.4	30.78	56.06
Lithuania	10.2	99.8	8.0	22.44	64.65
Moldova	12.6	51.9	12.9	23.61	64.39
Poland	18.1	91.5	20.5	24.83	77.06
Romania	7.2	89.0	3.2	21.11	68.69
Russian Federation	11.9	55.8	13.2	46.89	64.53
Slovak Republic	37.6	98.2	20.6	45.06	86.53
Slovenia	38.7	98.9	..	46.41	87.88
Ukraine	9.9	41.8	..	52.89	47.92
Uzbekistan	n.a.	n.a.	..	40.28	65.15

Sources: EBRD Transition Report 2003, World Bank Financial Structure Database, EBRD 1999 Legal Indicator Survey and author's compilations.

Table 4.24: Mapping of LIS Questions Into Banking Law Variables

Variable	LIS Question	Variable	LIS Question
MAND_AUDIT_EXT	Q25*100	FOR_EASE_P	(Q17+Q18+Q19+Q20)/4*100
EXT_AUDIT_EFF	Q26*100	ENTRY_REQ_P	Q12*100
CONS_STAT_EXT	Q27*100	PERM_ACT_P	Q7*100
CONS_EXAM_EFF	Q28*100	PROHIB_ACT_P	Q8*100
ACCOUNTING	Q24*100	SEC_RESTR_P	Q9*100
ACC_DISCREP	Q23*100	ACT_RESTR_P	(Q7+Q8+Q9)/3*100
DOCUMENT_DISCL	Q3*100	ANTI_LAUND_EXT	(Q14a/0.5)*100
DISCLOSE_EFF	(Q3+Q26)/2*100	ANTI_LAUND_EFF	(Q14b/0.5)*100
CAPADEQ_RULES	Q29*100	EXAM_EXT_P	Q5a/0.25*100
CAPADEQ_UND	Q30*100	EXAM_FREQ_P	Q5b/0.5*100
FOR_PERM_P	Q17*100	PROF_EXAM_P	Q5c/0.25*100
FOR_RESTR_P	Q18*100	INDEP_EVAL_P	Q15*100
FOR_LICENSE_P	Q19*100	SUP_INDEP_P	Q1*100
FOR_LIC_DIFF_P	Q20*100	EFFBANK99	(Q26+Q28+Q14b+Q5c)/2.75*100

Source: Legal Indicator Survey 1999, and author's compilations.

Table 4.25: Question Scores on Banking Law: Questions 1-11

Country	Q1	Q2	Q3	Q4	Q5	Q5a	Q5b	Q5c	Q7	Q8	Q9	Q10	Q11
Albania	0.44	0.75	0.65	0.88	0.65	0.25	0.25	0.15	0.88	-0.04	0.67	1.00	0.50
Armenia	0.25	1.00	1.00	1.00	0.75	0.25	0.25	0.25	0.84	0.00	0.00	1.00	0.00
Azerbaijan	0.67	0.75	0.67	0.83	0.75	0.25	0.25	0.25	0.73	0.00	0.67	0.33	1.00
Belarus	0.50	0.75	0.80	0.50	-0.17	0.00	0.00	-0.17	0.34	-0.17	0.00	0.00	0.00
Bulgaria	0.78	0.63	0.75	0.69	0.50	0.23	0.13	0.14	0.74	0.06	0.31	1.00	0.50
Croatia	0.79	0.69	0.60	0.75	0.51	0.22	0.13	0.17	0.69	0.30	0.63	0.67	0.63
Czech Republic	0.71	0.71	0.77	0.75	0.57	0.25	0.16	0.17	0.75	0.17	0.08	0.58	0.75
Estonia	0.71	0.75	0.63	0.71	0.54	0.25	0.10	0.19	0.67	-0.02	0.43	0.57	0.43
FYR Macedonia	0.75	0.75	0.67	0.92	0.92	0.25	0.42	0.25	0.78	0.28	0.33	0.33	1.00
Georgia	1.00	1.00	0.80	1.00	0.75	0.25	0.25	0.25	0.83	0.00	0.00	1.00	0.00
Hungary	0.83	0.83	0.78	0.77	0.53	0.25	0.07	0.22	0.68	0.00	0.33	0.92	0.91
Kazakhstan	0.50	0.70	0.80	0.85	0.47	0.25	0.05	0.17	0.74	0.00	0.80	1.00	0.60
Kyrgyzstan	0.50	0.75	0.67	1.00	0.58	0.17	0.25	0.17	0.73	0.33	0.00	0.67	0.33
Latvia	0.88	0.75	0.85	0.63	0.42	0.25	0.13	0.04	0.80	0.13	0.00	0.75	0.33
Lithuania	0.58	0.63	0.53	0.75	0.53	0.25	0.17	0.11	0.78	-0.11	0.00	0.33	1.00
Moldova	0.81	0.69	0.80	0.88	0.71	0.25	0.31	0.15	0.50	-0.04	0.25	1.00	1.00
Poland	0.85	0.80	0.74	0.86	0.40	0.25	0.00	0.15	0.77	-0.02	0.00	1.00	0.83
Romania	0.75	0.58	0.70	0.63	0.51	0.21	0.17	0.14	0.50	-0.03	0.17	0.83	0.67
Russian Federation	0.80	0.68	0.74	0.74	0.61	0.25	0.16	0.20	0.67	0.08	0.65	0.65	0.84
Slovak Republic	0.50	0.86	0.71	0.86	0.44	0.25	0.03	0.16	0.69	0.44	0.22	0.11	0.67
Slovenia	0.75	0.92	0.87	0.92	0.75	0.25	0.25	0.25	0.78	-0.06	0.67	1.00	0.50
Ukraine	0.61	0.75	0.73	0.81	0.69	0.25	0.32	0.12	0.75	-0.02	0.86	0.75	0.25
Uzbekistan	0.44	0.88	0.75	0.75	0.67	0.25	0.38	0.04	0.71	0.00	0.50	0.75	0.50

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 4.

Table 4.26: Question Scores on Banking Law, Questions 12-23

Country	Q12	Q13	Q14	Q14a	Q14b	Q15	Q16	Q17	Q18	Q19	Q20	Q22	Q23
Albania	0.95	0.92	0.79	0.50	0.29	0.88	0.71	1.00	1.00	0.33	1.00	0.71	0.67
Armenia	1.00	1.00	-0.17	-0.17	0.00	1.00	1.00	1.00	1.00	..	1.00	1.00	1.00
Azerbaijan	0.60	0.83	0.00	0.00	0.00	0.75	0.79	1.00	0.75	0.33	0.33	0.33	0.20
Belarus	1.00	0.50	-0.17	-0.17	0.00	0.75	-0.17	1.00	1.00	0.00	-0.17	-0.17	0.00
Bulgaria	0.96	0.86	0.84	0.50	0.34	0.61	0.90	1.00	0.96	0.60	0.56	0.42	0.20
Croatia	0.87	0.89	0.66	0.43	0.24	0.67	0.45	0.89	0.97	0.50	0.48	0.89	0.43
Czech Republic	0.98	0.71	0.75	0.46	0.29	0.45	0.76	1.00	1.00	0.88	0.69	0.56	0.32
Estonia	0.83	0.67	0.80	0.50	0.30	0.57	0.71	1.00	0.93	0.57	0.38	1.00	0.84
FYR Macedonia	1.00	1.00	0.24	0.11	0.13	0.67	1.00	1.00	0.50	0.00	0.67	1.00	1.00
Georgia	1.00	0.67	-0.17	-0.17	0.00	0.75	1.00	1.00	1.00	1.00	0.50	0.00	0.00
Hungary	0.95	1.00	0.75	0.45	0.30	0.75	0.79	1.00	1.00	0.90	0.77	0.91	0.42
Kazakhstan	0.88	0.92	0.18	0.13	0.05	0.60	0.77	1.00	0.65	1.00	0.20	0.37	0.28
Kyrgyzstan	1.00	0.89	0.69	0.50	0.19	1.00	0.33	1.00	1.00	0.67	0.28	1.00	0.53
Latvia	0.85	0.54	0.46	0.33	0.13	0.56	0.75	1.00	1.00	1.00	0.21	0.75	0.30
Lithuania	0.93	0.67	0.67	0.50	0.17	0.75	0.72	1.00	1.00	0.67	0.00	0.42	0.50
Moldova	1.00	0.71	0.23	0.17	0.06	0.44	0.90	1.00	1.00	0.67	0.50	0.17	0.15
Poland	0.97	0.88	0.75	0.50	0.25	0.68	0.96	1.00	1.00	0.43	0.40	0.17	0.00
Romania	0.70	0.54	0.79	0.50	0.29	0.70	0.62	1.00	0.95	0.60	0.67	0.31	0.17
Russian Federation	0.79	0.54	0.28	0.18	0.10	0.42	0.27	0.95	0.66	0.22	0.25	0.12	0.08
Slovak Republic	0.96	0.89	0.65	0.37	0.28	0.69	0.48	1.00	1.00	0.71	0.89	0.41	0.20
Slovenia	0.87	0.75	0.28	0.11	0.17	0.75	0.78	1.00	0.92	0.00	0.00	0.28	0.33
Ukraine	0.85	0.31	-0.06	-0.04	-0.02	0.64	0.17	1.00	0.96	0.38	0.08	0.55	0.27
Uzbekistan	1.00	0.88	0.10	0.04	0.06	0.69	0.31	1.00	0.81	0.67	0.21	0.21	0.10

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 4. Note: ".." means no answer was provided.

Table 4.27: Question Scores on Banking Law, Questions 23a-32

Country	Q23a	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32
Albania	n.a.	0.25	0.25	0.81	0.75	0.81	0.33	1.00	1.00	0.81
Armenia	n.a.	0.00	0.25	0.75	-0.17	0.75	0.17	1.00	1.00	1.00
Azerbaijan	1.00	0.00	0.25	1.00	1.00	0.50	0.11	1.00	1.00	0.67
Belarus	-0.17	0.00	0.25	1.00	1.00	0.75	0.00	0.75	-0.17	0.50
Bulgaria	0.83	0.07	0.36	0.95	1.00	0.81	0.67	0.96	1.00	0.68
Croatia	-0.17	0.39	0.83	0.83	0.76	0.81	0.17	0.89	0.82	0.61
Czech Republic	0.13	0.09	0.23	0.90	0.83	0.46	0.62	0.80	1.00	0.77
Estonia	n.a.	0.43	1.00	1.00	0.83	0.82	0.56	1.00	0.96	0.63
FYR Macedonia	n.a.	0.00	1.00	0.75	1.00	0.58	0.50	1.00	1.00	0.83
Georgia	1.00	0.00	0.25	1.00	1.00	0.50	1.00	1.00	1.00	0.75
Hungary	1.00	0.33	0.39	0.96	0.83	0.88	0.65	0.90	1.00	0.70
Kazakhstan	1.00	0.10	0.50	0.90	0.77	0.65	0.04	0.90	0.75	0.85
Kyrgyzstan	n.a.	0.17	1.00	0.92	1.00	0.25	0.50	0.88	1.00	0.88
Latvia	1.00	0.38	0.63	0.81	0.50	0.56	0.29	0.81	0.83	0.63
Lithuania	n.a.	0.00	0.25	1.00	0.42	0.50	0.50	1.00	1.00	0.88
Moldova	0.00	0.13	0.63	0.81	1.00	0.75	0.25	0.94	0.81	0.75
Poland	0.17	0.21	0.38	0.96	1.00	0.75	0.33	0.96	1.00	0.82
Romania	0.67	0.25	0.25	0.79	0.83	0.67	0.41	0.71	0.82	0.67
Russian Federation	0.40	0.03	0.25	0.88	0.67	0.60	0.13	0.80	0.90	0.60
Slovak Republic	-0.11	0.11	0.67	1.00	0.87	0.94	0.43	0.94	1.00	0.83
Slovenia	0.00	0.83	0.75	1.00	0.67	1.00	0.67	1.00	1.00	0.88
Ukraine	0.61	0.00	0.59	0.64	0.69	0.57	0.33	0.86	0.83	0.71
Uzbekistan	0.50	0.38	0.44	1.00	1.00	0.69	0.11	0.81	0.92	0.50

Sources: EBRD 1999 Legal Indicator Survey and author's compilations as described in Chapter 2 and Chapter 4. Note: "n.a." means "not applicable".

Appendix 4.B Banking Law Questionnaire

Q1. Are financial institutions regulated and supervised? Y__ N __

If yes, is the regulator:

a) The Minister of Finance or other political person?

b) A separate body that has at least some political independence?

c) A separate body that does not have political independence?

A 'Yes' answer carries 0.25, a 'No' answer is worth 0. Option a) carries 0, option b) 0.75, option c) 0.25. Maximum score is 1.

Type of question: extensiveness

Q2. Do banking supervisors have regular formal contact with bank management at financial institutions?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q3. What sort of reports are financial institutions required to provide to banking supervisors? (Please tick all that apply)

a) Financial Statements

b) Call Reports

c) Reports on investment activity

d) Information on the institution's loan portfolio

e) Internal policies and procedures of the financial institution

f) Other

Parts a, b, c, d, and e get 1/5 each, part f) gets zero.

Type of question: extensiveness

Q4. Do banking supervisors actively collect, review and analyse prudential reports from financial institutions?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q5a. Do banking supervisors have the authority or duty to conduct on-site supervisory examinations of financial institutions? Y__ N __

Q5b. If yes, are such examinations conducted:

a) More than once per year?

b) Annually?

c) Once every two years?

d) Only as needed?

Q5c. Is there a staff of professionally-trained bank examiners who conduct these examinations? Y__ N __U__

A Yes answer to the first sub-question gets 0.25; option a) scores 0.50 and option b) 0.25, c) and d) are worth zero. A Yes answer to the last part yields 0.25. Negative answers give zero. 'Unclear' answers are penalised at -1/6. The overall maximum is 1.

Type of question: first part (Q5a) is extensiveness-related; second and third parts (Q5b and Q5c, i.e. frequency of supervisory examinations and availability of professional bank examiners) are effectiveness-related.

Q6. Have banking laws and regulations been recently (i.e. within the past 8 years) enacted or amended? Y__ N __U__

A 'Yes' answer carries 1, a 'No' answer carries 0, 'Unclear' is worth -1/6.

Type of question: extensiveness

Omitted from aggregation of indices.

Q7. Does banking legislation or regulations include a list of permissible activities for banks? Y__ N __U__

If yes, do these activities include (Please tick all that apply):

a) only activities closely related to banking?

b) granting of loans?

c) securities underwriting or dealing?

d) insurance activities?

e) acceptance of deposits?

f) other

A 'Yes' answer to the first part carries 1/6; options b) to f) get a weight of 1/6; option a) gains 0 points. Maximum score is 1.

Type of question: extensiveness

Q8. Are there any types of activities that are prohibited for financial institutions? Y__ N __U__

If yes, do these include (Please tick all that apply):

a) Securities underwriting or dealing

b) Participating in investment funds

A negative answer to the first part of the question gets a weight of 1, sections a) and b), if chosen, carry 0 points. Maximum overall score is 1.

Type of question: extensiveness

Q9. Does banking legislation and/or regulations impose restrictions on the holding of securities (public or private) by banks? Y__ N __

A 'No' answer carries 1, 'Yes' gets 0.

Type of question: extensiveness

Q10. Does banking legislation and/or regulations prescribe minimum levels of professional qualifications for board members of banks? Y__ N __

A 'Yes' answer carries 1, 'No' gets 0.

Type of question: extensiveness

Omitted from aggregation of indices.

Q11. Does banking legislation and/or regulations provide for representation of supervisory authority on the (managing or supervisory) boards of banks? Y__ N __

A 'No' answer carries 1, a 'Yes' answer gets 0.

Type of question: extensiveness

Omitted from aggregation of indices.

Q12. In granting a license for the establishment of a financial institution, what information must the applicant provide? (Please tick all that apply)

a) The bank's ownership structure

b) Names and information about directors and senior management, including their professional qualifications

c) Operating plans

d) Projected financial condition

e) Sources of Capital

Each option carries 0.20; maximum score is 1.

Type of question: extensiveness

Q13. Must a financial institution seek prior authority from banking regulators before it engages in:

Mergers or acquisitions Y__ N __U__

Change of control or ownership of the bank Y__ N __U__

Entry into new line of business Y__ N __U__

A 'Yes' answer to each option is valued at 1/3; a No answer brings 0; each Unclear is penalised at -1/6. Maximum overall is 1.

Type of question: extensiveness

Q14a. Do banking laws require banks to implement policies and prac-

tices designed to prevent money laundering such as "know your customer" policies? Y__ N __U__

Q14b. If yes, how are such policies enforced? (Please tick all that apply):

a) Financial institutions are required to provide reports of certain customer transactions

b) Review of anti-money laundering policies are part of the supervisory examination

c) Financial institutions receive fines for non-compliance

d) No means of enforcement exist

e) Other

A 'Yes' answer to the first part of the question carries 1/2; each of options a), b), c) and e) gets 1/8. Option d) is penalised at -1/4.

Type of question: the first question (Q14a) is extensiveness-related; the second part (Q14b) on means of enforcement is effectiveness-related.

Q15. Do bank supervisors independently evaluate the bank's policies and procedures for the granting of loans and the making of investments?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q16. Do banking laws impose restrictions on lending by banks to their affiliates (related companies and individuals)? Y__ N __U__

If yes, are banks required to lend to affiliates on an arm's length (fair value) basis? Y__ N __U__

A 'Yes' answer to the first part of the question carries 0.75; a 'Yes' answer to the second part gets 0.25. 'No' answers get zero, "Unclear" answers are penalised at -1/6. Maximum overall is 1.

Type of question: extensiveness

Q17. Is foreign ownership in financial institutions permitted? Y__ N __

A 'Yes' answer to part one carries 1, a 'No' answer gets zero.

Type of question: extensiveness

Q18. Are there any restrictions on the percentage of foreign ownership permitted?

a) There are no restrictions on foreign ownership

b) Less than 10% foreign ownership permitted

c) Between 10% and 25% foreign ownership permitted

d) Between 26% and 50% foreign ownership permitted

e) Greater than 50% foreign ownership is permitted

Option a) is worth 1, options b) and c) are penalised at -0.50 and -0.25 respectively, option d) gets 0.50 and option e) is worth 0.75.The maximum overall score is 1.

Type of question: extensiveness

Q19. If yes, is a special license required in order for a foreign entity to make an investment in a local financial institution? Y__ N __

A 'No' answer gets 1, a 'Yes' answer carries 0. The maximum overall score is 1.

Type of question: extensiveness

Q20. Are the licensing requirements for the subsidiaries or branches of foreign banks different from the requirements for local banks? Y__ N __U__

A 'No' answer carries 1, a 'Yes' answer carries 0, 'Unclear' is worth -1/6.

Type of question: extensiveness

Q21. Must a lender obtain a license from the regulator in order to provide subordinated debt to a financial institution? Y__ N __

Can the subordinated debt of a financial institution be accelerated prior to final maturity? Y___ N ___U___

Is the subordinated debt of a financial institution ranked below unsecured claims in bankruptcy or insolvency proceedings? Y___ N ___U___

A 'No' answer to the first part gets 1/2, a 'No' answer to the part 2 is worth 1/4. A 'Yes' answer to part 3 also carries 1/4. "Unclear" answers are penalised at -1/6. Maximum score is 1.

Type of question: extensiveness

Omitted from aggregation of indices.

Q22. Do financial institutions generally prepare financial statements that are restated in accordance with the International Accounting Standards ("IAS") or the generally-accepted accounting principles of a country having an international financial centre (e.g., the United States or the United Kingdom)? Y___ N ___U___

A 'Yes' answer gets 1, a 'No' answer carries 0, 'Unclear' is penalised at -1/6.

Type of question: extensiveness

Q23. Has the shift in accounting standards affected the financial statements and income statements of financial institutions (e.g., banks that previously showed a profit are now shown as having a loss):

a) Not at all

b) Only for a few banks

c) For the majority of banks (greater than 50%)

d) For nearly all of the banks (almost 100%)

Q23a. If Q22's answer is No, are IAS in the process of being implemented? Y___ N ___U___

Each option is worth 1, 0.6, 0.4 and 0 in order of appearance. A 'Yes' answer to the final part (Q23a) carries 1, a 'No' is worth zero. "Unclear" answers are penalised

at -1/6. Maximum overall score is 1.

Type of question: effectiveness

Q24. Are local accounting standards set:

a) primarily by the government

b) primarily by the professional accounting community

c) by both the government and the professional accounting community

Option a) carries 0, option b) carries 1, option c) is worth 0.50. Maximum score is 1.

Type of question: extensiveness

Q25. Are financial institutions required to have their financial statements audited at least annually? Y__ N __

If yes, are the applicable auditing standards

a) local standards

OR

b) international standards

A 'Yes' answer gets 0.25; option a) gets 0 and option b) 0.75.

Type of question: extensiveness

Q26. If yes, do financial institutions use external auditors for their annual audit?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q27. Are the financial statements of financial institutions normally prepared on a consolidated basis? Y__ N __U__

A 'Yes' answer gets 1, a 'No' answer carries 0, 'Unclear' is penalised at -1/6.

Type of question: extensiveness

Q28. In practice, are financial institutions examined by the supervisory body (if any) on a consolidated basis (e.g., parent bank and branch banks are both examined together)?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q29. Are financial institutions required to establish minimum capital requirements? Y__ N __

If yes, do these requirements meet those established by the Basle Capital Accord? Y__ N __U__

A 'Yes' answer to part 1 yields 0.17; a 'Yes' answer to part 2 is worth 0.83. "Unclear" answers are penalised at -1/6.

Type of question: extensiveness

Q30. Are minimum capital requirements clearly described in the regulations and understood by bank management?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q31. Do banking supervisors have the authority to take corrective action when banks fail to adhere to relevant laws or their own procedures? Y__ N __U__

If yes, do their powers include:

Ability to revoke a license? Y__ N __

Authority to make a financial institution take corrective action Y__ N __

Imposition of civil fines or penalties Y__ N __

A positive answer to each of the first four sub-questions is worth 0.25. 'No' answers are worth 0. 'Unclear' answers get -1/6.

Type of question: extensiveness

Q32. When bank supervisors have identified a violation of law, committed by a bank, do they take corrective action?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Type of question: effectiveness

Q33. Is there separate legislation that deals with bank insolvency? Y__ N __U__

If yes, how many banks have been formally declared insolvent during the past (2) years:

a) 0-10?

b) 11-50?

c) more than 50 financial institutions?

A 'Yes' answer to part 1 of the question is worth 0.50; option a) gets 0, option b) 0.25 and option c) 0.50. Maximum overall is 1.

Type of question: effectiveness

Omitted from aggregation of indices.

Table 4.28: A Comparison of Banking Law Legal Indicator Survey Questions and Barth et al. (2001) Indices

LIS Qn No.	Belongs to	Question on	Relevance to	Barth et al. (2001) variable
Q1	Supervisory independence	Independent Banking Regulator exists	extensiveness	Independence of supervisory authority
Q3	Disclosure Requirements and Supervisory Powers	Types of bank documents disclosed to supervisors	extensiveness	Does not cover
Q4	Supervisory Powers	Frequency of collection and review of prudential reports by bank supervisors	effectiveness	Does not cover
Q5a	Supervisory Powers	Bank supervisors authorized to conduct on-site examinations of banks	extensiveness	Does not cover
Q5b	Supervisory Powers	Frequency of on-site examinations of banks	effectiveness	Does not cover
Q5c	Supervisory Powers	There are professional bank examiners to conduct effective on-site supervision	effectiveness	Supervisory tenure index

Q7	Permissible Activities	Permissible bank activities specified in law and a broad range of activities are allowed	extensiveness	Bank activity regulatory variables
Q8	Permissible Activities	There are no prohibitions on bank activities and securities and investment transactions are allowed for banks	extensiveness	part of Bank activity regulatory variables
Q9	Permissible Activities	No legal restrictions exist on holding of securities by banks	extensiveness	Securities activities index
Q12	Entry Requirements	Types of information to be provided by applicants for a bank license	extensiveness	Entry into banking requirements index
Q13	Supervisory Powers	Prior approvals from bank supervisors mandatory for banks' important decisions	extensiveness	does not cover
Q14a	Supervisory Powers	Anti-money laundering bank policies and practices mandated by law	extensiveness	does not cover
Q14b	Supervisory Powers	A wide array of means of enforcement of anti-money laundering rules exist	effectiveness	does not cover

Q15	Supervisory Independence and Powers	Frequency of independent supervisory evaluation of bank policies and procedures for granting of loans and making of investments	effectiveness	does not cover
Q16	Related Lending	Bank laws impose restrictions on bank lending to affiliates, and lending is on an arm's length basis	extensiveness	does not cover
Q17	Foreign Entry	Foreign ownership of banks is permitted	extensiveness	Limitations of foreign bank entry / ownership
Q18	Foreign Entry	No restrictions on percentage of foreign ownership banks exist in banking law	extensiveness	Limitations of foreign bank entry / ownership
Q19	Foreign Entry	A special license is not required for a foreign entity to make an investment in a local bank	extensiveness	Limitations of foreign bank entry / ownership
Q20	Foreign Entry	Licensing requirements for branches or subsidiaries of foreign banks do not differ from those for local banks	extensiveness	Limitations of foreign bank entry / ownership

Q22	Accounting Standards	Banks prepare statements using international accounting standards	extensiveness	close to Bank accounting index
Q23	Accounting Standards	Banks' shift to IAS use has not affected their previous financial results	effectiveness	close to Bank accounting index
Q24	Accounting Standards	Accounting standards set mostly by professional accounting community	extensiveness	close to Bank accounting index
Q25	Disclosure Requirements	Banks subject to mandatory annual audits, and international auditing standards apply	extensiveness	Certified audit required
Q26	Disclosure Requirements	Frequency of banks' use of external auditors for their annual audit	effectiveness	Certified audit required
Q27	Disclosure Requirements	Banks' financial statements normally prepared on a consolidated basis	extensiveness	Part of Bank accounting index
Q28	Disclosure Requirements	Frequency of consolidated examinations of banks by supervisory body	effectiveness	Part of Bank accounting index
Q29	Capital Adequacy	Banks required to establish minimum capital requirements, and to meet the Basle Accord requirements	extensiveness	Overall capital stringency index

Q30	Capital Adequacy	Frequency of understanding of minimum capital adequacy requirements by bank managers	effectiveness	does not cover
Q31	Corrective Actions and Supervisory Powers	Bank supervisors authorized to undertake corrective actions against banks for violations of banking laws	extensiveness	Official supervisory action index
Q32	Corrective Actions and Supervisory Powers	Frequency of supervisory corrective actions against banks	effectiveness	Official supervisory action index

Chapter 5

Legal Determinants of Foreign Direct Investment in Transition Economies

5.1 Introduction

Foreign direct investment (FDI) is a driving force for enterprise restructuring in the process of economic transition. Empirical studies of the impact of FDI indicate that among firms in transition economies, it is those with foreign ownership who display the highest productivity levels[1]. The accepted view is that the transition economies can benefit directly from FDI inflows in terms of higher employment and capital stock, and indirectly as a result of technology transfer, from improved management and labour skills and better marketing and distribution. FDI can be complementary to local industry by creating backward linkages to local suppliers and thus benefit local downstream firms, which due to multinational firm entry would initially be exposed to stronger competition. As a result of the possibility of FDI acting as

[1]See for example Djankov and Murrell (2002).

both a substitute for the local downstream industry and as a complement to the local upstream industry, and depending on the magnitude of these effects, it can be shown that FDI can lead to growth of local industry.

Despite its apparent benefits, FDI flows have been limited in scale, and some transition economies seem to have attracted much less FDI than others. What are the reasons for this? Which are the key determinants of FDI in the region? What is the role of contract enforcement and the operation of the courts for the decision of foreign investors to enter these markets? These are the main questions the present chapter aims to address. Our initial conjecture is that institutional factors and legal enforcement will affect the willingness of foreign entrepreneurs to invest in these markets. Related case studies and investor surveys indicate that property rights protection and legal factors are perceived as being among the main obstacles to high FDI inflows in transition.

5.2 Literature Review

There is a growing empirical literature examining the determinants of FDI flows into transition economies as well as studying the impacts of FDI on host-country economies within the sample of transition countries. In addition, there are numerous empirical studies which look at FDI flows into developing economies and developed market economies. Within the strand of research investigating the determinants of FDI flows worldwide, and in transition specifically, recent work – reviewed next – has already incorporated institutional factors, such as legal development, corruption, and government regulation, into estimations of the amount of FDI flows. We review both strands of research – the one on FDI determinants, and the one on FDI effects – focusing mostly, but not exclusively, on the experience of the transition economies. Among the first strand of papers, we also pay special attention to studies, which isolate the impact of institutional and legal factors driving FDI flows.

5.2.1 Studies of the Determinants of FDI

Firms choose to set up business operations in a foreign country for three key reasons, known as the OLI model developed by Dunning (1980). The OLI paradigm sees the decision to invest abroad as motivated by ownership advantages, location advantages and internalisation advantages. Ownership advantages refer to firms' ownership over specific assets such as patents, brands, management and marketing practices, technological processes, etc. These provide a foreign investor with an advantage over existing local producers. Location advantages result from factors such as lower production costs in a foreign country due to, for instance, lower labour costs, lower energy costs, availability of natural resources, access to specialized labour or skills, etc. Location advantages determine where a foreign operation will be established. Finally, internalisation advantages occur whenever a firm benefits from retaining its assets in a single corporate structure rather than licensing or franchising, i.e. leading it to prefer a hierarchical organization over a market transaction. This may be the case when licensing or franchising will diminish firm benefits because of, say, poor protection of intellectual property rights in host countries, leading it to lose its advantage.

In the OLI framework, FDI takes place when a firm has both ownership and internalisation incentives, i.e. the firm possesses some proprietary technology, for example, and prefers to exploit its ownership advantages internally and directly on the foreign market rather than through licensing agreements with an independent foreign firm over the use of this technology. Location advantages should also exist in order for FDI to occur.

Bevan, Estrin and Meyer (2001) examine empirically FDI flows from developed into transition economies, with a special focus on labor costs and institutional development of the host countries. They incorporate institutional variables into the traditional OLI paradigm, developed by Dunning (1980, 1998) and just defined

above, and argue that institutions can be thought of as providing important locational advantages and affecting the interactions between ownership and locational variables. Specifically, the authors augment prior studies which include aggregate institutional indices among the determinants of FDI flows, by testing for the impact of a series of different measures of institutional development in transition economies. Thus, their approach is to use disaggregated indices of institutional quality in order to be able to identify which institutions attract FDI and which are nice to have, but irrelevant for FDI. Employing bilateral FDI flows between 18 developed (EU-14, Korea, Japan, Switzerland, and the USA), and 12 transition economies, and averaging the dependent and explanatory variables over the period 1994-1998, the authors develop a model, which explains FDI flows as a function of relative unit labor costs between source and host country (measured as the differential in average manufacturing wages, adjusted for labor productivity in source and host countries), geographical distance between host and source countries' capital cities and the presence of a common border, and source- and host-country GDP. The latter two variables capture a source country's ability to generate multinational firms and outward FDI, and the scale of the host country market to capture theories that FDI is motivated by a large host country market size. The inclusion of distance in the regression equation is motivated on grounds that it represents a proxy for cultural and linguistic differences between source and host country, i.e. the so-called "psychic distance"[2]. A succession of institutional variables are included in the regression equation one at a time. These include the overall index of progress in transition, compiled by the EBRD as a proxy for overall institutional development; privatization measured by the EBRD indices of large-scale privatization, small-scale privatization, the share of the private sector in GDP, and the method of privatization; financial market infrastructure, measured by the EBRD indices of banking

[2]O'Grady and Lane (1996) discuss the "psychic distance paradox" for Canadian retailers operating in the United States.

sector reform and non-banking financial institutions reform; functioning markets, measured by the EBRD index of price liberalization, the EBRD index of foreign exchange liberalization and trade liberalization, and the EBRD index of competition policy; and legal infrastructure and corruption variables, comprising the EBRD indices of legal extensiveness and legal effectiveness for 1999. The results of the regression estimations indicate that host economy size and the ability of the source country to generate FDI have a positive significant impact upon FDI flows; unit labor cost differentials increase FDI flows significantly; and distance reduces them significantly, whereas a common border raises them significantly. Among the set of institutional variables, privatization and the private sector's share in output, the development of the host-country banking sector, liberalization of the host-country foreign exchange and trade, and development of better legal institutions are all significantly associated with higher FDI flows. However, an important limitation is that the method chosen cannot test for all these institutional factors simultaneously due to multi-collinearity. Therefore, even though the authors are able to test how indices related to financial development for example, perform in explaining bilateral FDI flows, they are unable to say how important financial development measures are relative to legal development measures, for example. The legal indices employed in the main regression one at a time are both positively and significantly associated with FDI flows, but contrary to expectations, legal effectiveness loses significance when both are included in the same specification. The authors conjecture that, in part, this is due to Russia's low effectiveness scores – omitting a Russia dummy makes the effectiveness index significant.

Despite these caveats, the focus on laws and their enforcement is an important element of the Bevan et al. (2001) analysis. In particular, they emphasize the need for trained judges and lawyers, and general knowledge about laws and legal proceedings. Therefore, this part of their approach is similar to our focus on the

role of judicial enforcement for FDI, as shown in later sections.

A study by Garibaldi, Mora, Sahay and Zettelmeyer (2001) is in the same vein. The authors examine a wide array of potential determinants of private capital flows – i.e. both direct and portfolio investment – into the 26 transition economies, using panel data from 1990-1992 through 1999. A dynamic panel econometric model is estimated, and a general-to-specific model selection approach is adopted. Among the general determinants of FDI and portfolio investment which are being tested for, are host-country inflation, its fiscal balance, lagged economic growth, the exchange rate regime, and an indicator of market liberalization and privatization. Importantly, poor indicators of institutional quality and existing laws are shown to deter private investment in general, and FDI in particular. The legal and institutional factors included in the model are the ease of contract enforcement, the incidence of burdensome and unpredictable government regulation of businesses, red tape, etc. Market perception indicators are also used as a proxy for institutional factors. Some specific determinants of FDI are also included in the model. These are average monthly wages as a measure of competitiveness; trade liberalization as a proxy for openness; legal restrictions on FDI; and method of privatization. In addition, specific determinants of portfolio investment are also considered. These include the EBRD index of securities market development, restrictions on portfolio investment, indicators of default risk and Treasury Bill rates. The main findings of the regression analysis suggest that in the FDI regressions wage costs are overshadowed by macroeconomic stability and governance indicators. Among the governance variables, only the World Bank red tape indicator is found significant. The residual of the perception-based Euromoney indicator from its regression on all other dependent variables is always significant. In other words, perceptions of institutional quality matter over and above their information about economic fundamentals. However, it is essential to note that the use of investor magazine ratings such as the Euromoney

rating suffer from lags with which information on fundamentals becomes available, and may be subject to reverse causality, i.e. higher ratings may be due to higher observed capital flows rather than the reverse. The portfolio regression displays a lower fit, and a high level of statistical significance for the property rights indicator. Among the full set of variables employed, only securities market infrastructure – as measured by the EBRD index of securities market development – and the protection of property rights, i.e. the confidence that assets will not be expropriated, are found to have a significant impact upon portfolio investment flows. No other factors controlled for are found significant.

Unlike Garibaldi et al. (2001), who use aggregate flows of FDI to estimate their determinants, Resmini (2000) utilises a sectoral approach in studying the determinants of FDI in twelve Central and Eastern European countries. She estimates a panel model for the period 1991-1995, with FDI flows in US dollars in four manufacturing sectors as the dependent variable. The four sectors being studied are scale-intensive, high-tech and traditional sectors, and specialized producers (according to the Pavitt taxonomy). The author hypothesizes that sectoral characteristics affect the determinants of FDI. The econometric model tests for significance of market size (measured by population and GDP per capita), geographical proximity, wage differentials between home and host countries, progress in transition (proxied by the Operation Risk Index (ORI) published by BERI S.A.), degree of openness of the economy (measured by each country's bilateral trade with the European Union (E.U.) as percentage of its GDP), and the size of the manufacturing sector to test for potential agglomeration effects, such as industrial tradition and presence of skilled labor. The results of Resmini's paper indicate that in the pooled regression – without taking into account sectoral differences – GDP per capita, population, the ORI indicator and the wage differential are significant determinants of FDI flows. When FDI flows are estimated separately for each of the four sectors, differences emerge

between the determinants of FDI into the scale-intensive and traditional sectors. In contrast to investment in scale-intensive industries, FDI into traditional industries is affected significantly by both the size of the host country's manufacturing sector and its degree of trade openness. Conversely, the ORI measure is found significant for FDI into scale-intensive sectors, but not so for traditional sectors. Due to some methodological concerns, these results are only suggestive. An important element related to the current chapter is the inclusion of the ORI indicator, which measures the quality of a country's business environment, and encompasses 15 different criteria, including bureaucratic delays, privatization, attitude toward foreign investors and their profits, and enforceability of commercial contracts, among others. It is found to be a highly significant determinant of FDI flows into both capital-intensive and science-intensive manufacturing operations.

A recent paper by Shiells (2003) highlights the importance of institutional factors for FDI flows into the Commonwealth of Independent States (CIS) countries only. It contends that FDI flows into the former Soviet Union have been related to natural resource extraction and energy transportation infrastructure projects, and to large privatization transactions. The author seeks the impediments to higher FDI flows in the investment climate, and utilizes IMF country staff assessments and survey data from various sources to validate the impact of investment climate variables on FDI. Weak legal and regulatory frameworks, as well as inadequate property rights protection, are quoted among the investment climate features thought to affect FDI flows. Specific case studies and information presented for each CIS country almost invariably point to deficiencies in court enforcement of contracts, unclear insolvency and corporate governance laws, ineffective banking and stock market supervision, as facets of the investment climate which act as crucial deterrents to FDI. For instance, in the case of Kazakhstan, it is noted that the Investment Law limits litigants' rights of appeal before international arbitration bodies. In Russia corrupt courts are cited

as one of the main reasons for foreign investors not doing business there, according to a study by the Foreign Investment Advisory Services (FIAS) at the World Bank and the International Finance Corporation (IFC). Among the group of energy-importing CIS countries, it is mentioned that foreign investors involved in disputes with local business partners in Georgia have been subject to arbitrary court decisions, favoring local investors. Moldova is cited as an example of an open trade regime and effective banking supervision, both enhancing its investment climate, however it is said to suffer from inadequate insolvency, secured transactions and corporate governance laws, as well as from ineffective implementation of these laws. A survey of foreign investors in Ukraine quoted by Shiells (2003) indicates ambiguity of the legal system as one of the main deterrents of FDI. Overall, ranking of various obstacles to FDI by the interviewed IMF country teams suggests that inadequate property rights protection – in the form of corruption, excessive regulation, and crime – is most often perceived as problematic for foreign investment. The study, however, does not rely on any rigorous econometric technique to evaluate various impediments. It is thus unable to isolate those factors of the institutional environment, which best explain the low FDI flows to the CIS countries – be they laws, contract enforcement, corruption, or any other one.

Globerman and Shapiro (2002) examine the impact of institutional factors on FDI inflows and outflows in a cross-section of over 100 countries worldwide, and in particular focus on the effect of what they call "governance infrastructure". The governance infrastructure in their paradigm incorporates a country's political, institutional and legal environment. The authors use as a starting point the growing empirical evidence that cross-country differences in productivity and growth are related to institutional development and the governance infrastructure, e.g. Hall and Jones (1999). The argument then is, that since the business climate of a country affects both domestic and foreign investment, and since FDI can enhance efficiency

in the host-country economy, it is a natural extension of the literature to examine the effect of the governance infrastructure on FDI flows. The paper uses cross-sectional data, averaged over 1995-1997, and employs as main explanatory variables the Kaufmann et al. (1999) indices of governance, the United Nations Human Development Index (HDI), and the Environmental Sustainability Index (ESI), created by the World Economic Forum together with Columbia and Yale Universities, and measuring environmental quality and regulation. The Kaufmann et al. (1999) indices are estimated, using 31 different qualitative indicators from 13 different sources such as the Heritage Foundation, the World Economic Forum, the Economist Intelligence Unit, BERI, and the World Bank, among others. The indices employed in the paper by Globerman and Shapiro (2002) cover political instability, rule of law, graft, regulatory burden, voice and political freedom, and government effectiveness. The Rule of Law index employed itself measures contract enforcement, property rights, theft and crime, etc. The estimated models for FDI inflows and outflows also control for traditional variables such as size the host country economy, its trade openness, tax regime, labor costs, exchange rate instability and physical infrastructure. None of these variables, with the exception of GDP per capita, are however found significant. The results of the preferred parsimonious model indicate that both FDI inflows and outflows are affected significantly and positively by the governance infrastructure of the host (source) country. The findings also indicate that the effects of the governance infrastructure on FDI inflows diminish as country size increases, and that improvements in governance reduce FDI outflows for small economies, but encourage outflows from larger economies. Restricting the sample to developing and transition economies only, shows that governance infrastructure raises FDI inflows, but has no effect on outflows, thus leading to positive effects on net FDI inflows. However, there are some concerns about this approach. These are using FDI data averaged over the years 1995 to 1997, while many of the independent

variables are for 1997 and thereafter. For instance the environmental quality index (ESI) is for 2000. The authors justify their approach by citing data limitations, and on grounds that many of these indices (ESI or the Kaufmann et al. (1999)) are unlikely to change much over time. However, for some economies such as developing and transition, where there have been legal reforms and changes during the decade of the 1990s, one would expect changes in some of the governance indices even over short periods of time. Furthermore, a remaining unresolved issue is also the multi-collinearity and omitted variable problems, typical in cross-section estimations of this type. For instance, GDP per capita is shown to be highly correlated with the governance, HDI and ESI indices. This problem is acknowledged, but no steps are taken to correct for it. Despite these drawbacks, the paper makes a contribution by trying to see whether FDI inflows and outflows respond to governance, human development and environmental factors in host economies, and to disentangle which of the institutional factors, purported to affect FDI, matter most.

Other related contributions, which emphasize the role of institutions in attracting FDI, include Bevan and Estrin (2000), Altomonte (2000), Altomonte and Guagliano (2003) and Wei (2000a and 2000b). For example, Bevan and Estrin (2000) estimate the determinants of bilateral FDI flows from 14 European Union countries, the United States, Japan, Korea and Switzerland, into 11 Central and Eastern European countries, using panel data, covering the period from 1994 through 1998. The empirical model includes standard variables, which theory and prior empirical evidence shows as driving FDI flows to a particular location, such as host country size, input costs – labor, energy and natural resources – and the risk associated with investing in a foreign country. The authors proxy country risk by country credit ratings published bi-annually by the Institutional Investor magazine. The novelty in the paper is attempting to determine which institutional and political factors affect these credit ratings, and to investigate how specific E.U. announcements re-

garding the accession process for joining the European Union have affected FDI flows and country credit ratings. The paper does acknowledge that country risk comprises three main elements: macroeconomic stability, institutional stability and political stability. Among the institutional stability variables, the authors list the transparency of legal regulations and the scale of corruption, the tax regime and specific policies toward FDI. The results of the econometric estimations indicate that FDI inflows are significantly affected by host country GDP, unit labor costs, perceived country risk as measured by the Institutional Investor ratings, and by gravity factors such as distance between home and host countries. It is also found that private sector development, industrial development, the government balance, gross reserves and corruption are significant determinants of perceived country risk. Announcements related to the accession process are found to raise FDI inflows directly, which then work to improve country credit risk ratings. While Bevan and Estrin's (2000) results are intuitive and shed light on important effects related to the E.U. accession process on FDI inflows, they are by no means conclusive. Thus, credit risk and its determinants may be subject to measurement problems, and there may be multi-collinearity among the independent variables in the credit risk regressions. The authors do highlight the importance of institutional environment factors, but do not include a wider set in estimating the credit risk regressions – in fact, most of the employed explanatory variables are related to macroeconomic stability and/or political stability. The only institutional measure is the so-called "bribe tax", which is based on firms' responses to the 1999 joint World Bank/EBRD Business Environment and Enterprise Performance Survey (BEEPS), and measures the frequency with which firms report making unofficial payments to get things done. Therefore, the study fails to capture the richness of the institutional environment, which is likely to affect perceptions of country risk.

Altomonte (2000) studies the determinants of industry-level FDI into ten transi-

tion economies of Central and Eastern Europe, and conducts panel Probit regressions with data over the period 1990-1995. He stresses the relevance of the institutional environment variables as determinants of FDI inflows, and in particular draws attention to the design of an enforceable legal framework. The novelty of his approach lies in applying real option theory to the standard OLI paradigm, and showing how ownership and internalisation advantages may, or may not, lead an investment in a foreign country to be undertaken, depending on investors' uncertainty about the future and the specificity of the advantages. A crucial element of this theory is the uncertainty, which foreign investors face and the general macroeconomic volatility of a host country. Variables, which reduce uncertainty and volatility are conjectured to be crucial in determining whether or not a foreign investment is undertaken. Among the variables, reducing uncertainty, the author lists the institutional environment of the host country, which encompasses the regulatory regime of foreign operations, transparency and enforceability of laws. Accordingly and like Resmini (2000), the regressions control for the Operations Risk Index (ORI) by BERI S.A., which measures the business climate as perceived by a permanent panel of world experts, and it is found to have a significant and positive impact on the probability that an investment operation is undertaken. Furthermore, an objective institutional measure is also tested – called LEGAL – which measures the extent to which the laws related to repatriation of capital, and the practice of dividends, royalties and other payments correspond to those of a modern market economy. This index is a weighted average of six components, three of which refer to the laws as they are written, and three – to the practice of the law, and is also calculated by BERI S.A. It is found insignificant for the FDI inflows – i.e. the host-country laws on repatriation of capital, etc. measured by the LEGAL index, do not affect investors' expectations and uncertainty. Among the economic variables, GDP per capita and population of the host countries are found significant, as well as its relative comparative ad-

vantages with respect to the cost of labor. Among the institutional variables, the ORI indicator and the measure of underlying economic volatility of the host country affect FDI decisions significantly. Importantly for the analysis of this chapter, enforceability of contracts is one of the ingredients of the ORI indicator, which however incorporates more macroeconomic measures such as inflation, balance of payments, economic growth, currency convertibility, etc. Therefore, it is not clear whether the ORI indicator affects FDI because of its components related to macroeconomic stability, or due to other features such as enforceability of contracts, policy continuity, etc.

One of the significant early contributions in the related literature on FDI in transition is by Lankes and Venables (1996). Using a survey of senior managers in 117 Western European manufacturing companies, the authors attempt to identify the main determinants of FDI inflows into the transition economies. They also examine some of the characteristics of different projects and how these characteristics are linked to choice of country location. One of the authors' main findings is that host country progress in transition, as measured by the EBRD transition indicators, acts as a significant determinant of FDI. Furthermore, the type of FDI (export-oriented or market-seeking) and the control mode (wholly-owned subsidiaries or joint ventures and licensing agreements) are found to depend on progress in transition too. The transition indicator variable is an average of nine transition indicators, one of which is progress in legal reform. Legal and regulatory risks were perceived by respondents as one of the main sources of country risk. Also, contract enforcement was found to be of concern to foreign investors in relation to control choice. Thus for fully-owned projects government regulations appear as one of the significant factors; for joint ventures these are control of partner firm's production quality, sales and intellectual property. Judicial enforcement is also found to matter for the decision of which control mode to adopt. The authors employ a multinomial logit model and

find that essential project characteristics - its status, project function and control mode - are determined by the country transition indicator. Regulatory concerns appeared significant for country choice too.

Lankes and Stern (1997) examine different kinds of capital flows into the transition countries and pay particular attention to FDI. They argue that progress in transition is the main factor behind FDI inflows. The authors also quote Lankes and Venables (1996) in criticising laws and regulations as being burdensome and ever-changing, the regulatory environment as uncertain, and enforcement of property rights as poor and plagued by crime and corruption. Again, as in Lankes and Venables (1996), the authors suggest that legal statutes and enforcement are likely to affect FDI. They also argue that geographical and cultural proximity of investment locations to Western Europe may have a strong impact on cost-motivated FDI inflows.

Among these early papers on FDI in transition, Papazoglou and Liargovas (1997) attempt to identify the main determinants of FDI into the Black Sea Economic Cooperation (BSEC) transition countries. They find that progress towards liberalisation, and the speed and form of the privatization programme, explain almost all the variation in FDI in the BSEC economies. Liberalisation progress is captured by an index, constructed by the EBRD in 1995 as a weighted average of estimates of liberalisation of domestic transactions, external transactions and entry of new firms. Privatization speed and form are proxied by the percentage share of private sector output in GDP. Market size, openness of the economy and the ratio of the local nominal wage to that in OECD countries are among the other determinants of FDI inflows.

Brock (1998) attempts to explain regional differences in FDI in Russia over the period 1993-1995. He establishes that the crime level, market size and education of the labour force appear as the only significant determinants of regional FDI inflows.

5.2.2 Studies of the Impact of FDI on Host-Country Economies

It is commonly assumed that FDI can be beneficial to the host economies for a number of reasons. First, foreign firms can bring better technology and upgrade the machinery and equipment (hardware) as well as the train and introduce new production processes (software) into the domestic firms with foreign participation. Thus, foreign investment can bring about the much needed restructuring of domestic firms, including improved corporate governance. Second, aside from the transfer of new technology, knowledge, management practices and know-how, foreign ownership can harden budget constraints since the presence of a foreign owner weakens the link between the firm and the state. Third, apart from its direct impact upon the domestic firms with foreign participation, foreign ownership can result in positive externalities – i.e. spillover effects to other domestic firms along the supply and client chain through the transfer of technology and know-how. Such spillover effects through backward linkages to domestic suppliers and forward linkages to domestic customers outside the specific industrial sector can lead to higher productivity beyond the firm and industry where FDI takes place. Intra-industry spillovers may also ensue – if imitation of new production methods by domestic competitors increases competition and efficiency.

A number of empirical studies address the question of how foreign direct investment affects firm performance and productivity in transition economies, and whether or not positive spillover effects exist, e.g. Djankov and Hoekman (2000), Barrell and Holland (2000), Konings (2001), Damijan et al. (2003) and Yudaeva et al. (2003), to name a few. Chapter 5 of the EBRD Transition Report 2003 summarizes much of the available empirical evidence on impact of FDI in transition. Generally, these studies employ firm-level data on inputs and sales, and estimate in a panel-regression dynamic framework the effects of firms' foreign ownership on their total factor productivity, and the effects of average industry or regional for-

eign ownership on domestic firms in the respective industry or region, i.e. spillover effects.

Djankov and Hoekman (2000), for example, examine the effects of foreign ownership on 513 Czech enterprises, of which 173 had some foreign participation. The data covers manufacturing, services, mining and construction sectors. They use firm-level data from 1992 through 1996, and establish that foreign investment increases growth in sales in both OLS and random effects panel estimations, controlling for sample selection bias due to foreign firms picking the most productive domestic firms to begin with. They find that FDI does increase sales growth significantly in both specifications, suggesting that foreign investment involves a transfer of technology; in contrast, joint venture participation has a positive but insignificant impact on recipient firms' sales growth. Second, the authors test the hypothesis of positive spillovers by including the share of assets of firms with foreign partners in total assets of the economy, lagged one year, among the explanatory variables, and run the estimation using as a dependent variables sales growth of domestic firms without foreign participation only. They find evidence of statistically significant negative spillovers, i.e. greater foreign participation is associated with worse performance by other domestic firms. Restricting the spillover effect to cover the share of assets of foreign affiliates in total assets of the sector, i.e. excluding joint ventures on grounds that they allow for greater spillovers, does not increase the magnitude of the negative spillovers. In fact, it produces an offsetting effect – the estimated coefficient remains negative, but becomes smaller and insignificant. These results prompt the authors to conjecture that firms without foreign participation may have too low absorptive capacity to avail themselves of spillovers when they occur, and that firms with foreign participation may have absorbed a significant share of the available stock of labor with requisite skills. In summary, Djankov and Hoekman (2000) determine that foreign ownership has had significant positive impacts on TFP

growth of recipient firms, and that foreign affiliates have a greater impact on TFP growth than joint ventures do. Taken together, foreign affiliates and joint ventures are found to have a significant negative impact on firms with no foreign links. This result however is not robust to excluding joint ventures as a source of spillovers.

In another extension of this strand of literature, Barrell and Holland (2000) look at the impact of FDI on labor productivity in eleven manufacturing sectors in the Czech Republic, Hungary and Poland They conduct panel data analysis of labor demand, allowing the stock of FDI to affect technological progress, using data from 1993 through 1996. The authors show that a relatively high share of these countries' gross fixed capital formation relies upon FDI (with Hungary recording FDI inflows accounting for 53% of gross fixed capital formation in 1995), yet they argue that FDI does not contribute only toward fixed capital formation, but also brings inflows of new ideas, production techniques and management practices. These are likely to have the strongest impact on productivity. The estimation results indicate that the stock of FDI affects labor productivity significantly and positively in most of the manufacturing sectors considered, except for leather, transport equipment and "other" industries. In these three sectors productivity increases are driven by other exogenous factors. In contrast, in the food, textiles, chemicals and rubber sectors there is no evidence of exogenous influences on labor productivity, once FDI is taken into account. The results also indicate that the impact of FDI on labor productivity has been greater than the impact of domestic investment, or in other words, that the impact of FDI on labor productivity is not only driven by fixed capital investment but by investment in intangible assets. Various robustness tests – controlling for the share of the private sector, imports and R&D expenditures – do not alter the main findings. There is no evidence that private ownership, imports or R&D have affected labor productivity significantly. However, the results do show that FDI is attracted to sectors with high research content (measured by average business expenditure

on R&D to sectoral value added in the 11 sectors object of study, but for the G-7 countries). Once research content is accounted for, FDI does not have a significant impact upon labor productivity. An important limitation of this study is that it only determines the impact of FDI on aggregate labor productivity at the sectoral level – it cannot distinguish between differences in productivity of domestic firms and firms with foreign participation.

Konings (2001) studies the impact of FDI on domestic firms in Bulgaria, Romania and Poland, using a panel firm-level dataset covering the period from 1993 through 1997. The main questions his paper asks are similar to those asked by the study of Djankov and Hoekman (2000): whether foreign firms perform better than firms with no foreign participation, and whether foreign firms generate spillovers to domestic firms. He argues that technology transfers from foreign to domestic firms can bring about positive spillovers, but there is an opposite effect – a competition effect – which could is summarized by domestic firms producing less after foreign entry, which pushes them up their average costs curves, if we assume high fixed costs and downward sloping average cost curve. Konings' results indicate FDI inflows does not improve firm performance in Bulgaria and Romania, but does so significantly in Poland. Since Poland is more advanced in transition progress, this is taken to imply that improvements in performance materialize with a lag and depend on progress in transition. Furthermore, the results for Bulgaria and Romania reveal statistically significant negative spillovers from foreign to domestic firms at the sectoral level, and no significant sectoral spillovers in Poland. This is conjectured to be due to the competition effect dominating the technology transfer effect from foreign to domestic firms in Bulgaria and Romania, which would hold if we assume decreasing average costs (increasing returns to scale), and if the technology gap between domestic and foreign firms is large. There is also weak evidence that regional spillovers – i.e. the idea that any positive externalities from foreign firms are likely to first accrue to

their neighbors, as a result of workers usually relocating to jobs in other firms in the same region – with the results for Poland showing marginally significant regional negative spillovers, but no significant regional spillovers from foreign to domestic firms in Bulgaria and Romania. These results therefore echo Djankov and Hoekman (2000) in establishing a positive impact of foreign investment on recipient firms, but no or negative spillovers from foreign to domestic firms.

Yudaeva et al. (2003) present evidence on the impact of foreign direct investment on the productivity of Russian firms, and establish that firms with foreign ownership have higher value added than domestic firms, controlling for sample selection bias resulting from foreign investors choosing to invest in the more productive local firms. In fact, the results suggest that FDI in Russia has gone into less productive industries rather than into more productive ones. The authors also find that more reform-oriented Russian regions benefit from more productive FDI. The study tests for spillovers from foreign to domestic firms, and establishes that positive spillovers are present from foreign to domestic firms in the same industry, but that negative spillovers exist from foreign firms to domestic firms in vertically-related industries. Therefore, the competition effect FDI generates outweighs the positive spillover effect from technological diffusion for upstream and downstream firms. Time is found to dampen this negative effect; and to increase the positive spillover effect for within-industry firms. Finally, educational attainment of the population in the Russian regions is found to enhance positive spillovers from foreign to domestic firms in the same industry.

In summary, the related literature on FDI applied to transition economies, shows ambiguous results about spillovers from FDI; the literature on FDI determinants has recently started incorporating host-country institutional factors in the analysis of location advantages.

I shall try to contribute to the empirical literature on FDI by analysing in greater

detail its legal determinants. While each of the studies on determinants of FDI mentioned earlier considers legal factors in one form or another, none of them systematically identifies the individual impact of legal and institutional indicators on FDI inflows. Therefore, I aim to see which institutional factors are important for FDI, whether legal enforcement matters, and whether government regulation has an effect on foreign firms' decisions to invest locally. We want to see whether contract enforcement affects flows of cumulative per capita FDI into the transition economies over the period 1999-2002. For this purpose we employ indices of general effectiveness of commercial law, constructed on the basis of the 1999 EBRD Legal Indicator Survey. Alongside our institutional / legal explanatory variables we employ also market size, inflation, growth and geographical distance to Western Europe as explanatory variables in the regressions[3].

This chapter is organised in the following way: section 5.3 discusses the choice of variables and model specification; section 5.4 presents the data; section 5.5 shows the main regression results; and section 5.6 offers some concluding remarks. All the relevant economic and legal data are shown at the end of the chapter.

[3]Portes, Rey and Oh (2001) find substantial evidence that cross-border equity flows are primarily determined by market size, distance and openness, but that information asymmetries are extremely important too. Thus, information transmission as captured by international telephone call traffic and multinational bank branches, informational asymmetries between domestic and foreign investors, given by the degree of insider trading on the stock market, and financial sector efficiency, appear to affect international financial asset flows. These variables also seem to improve standard gravity equations for trade in goods.

5.3 Choice of Variables and Regression Model Specification

As outlined in much of the related literature – Resmini (2000), Bevan, Estrin and Meyer (2001) – the OLI approach offers a useful set-up for analysing the decision to undertake FDI and for studying empirically the pattern of FDI inflows across different countries. In particular, it is argued that while ownership and internalisation advantages are firm-specific determinants of FDI, location advantages are country-specific. Importantly, location advantages include home country characteristics, which facilitate the development of ownership advantages by domestic firms, which allows them to become multinational. But more pertinent to our analysis, they include host-country characteristics, which allow them to attract foreign firms in possession of ownership advantages.

The literature on determinants of FDI essentially examines the location incentives for investing abroad. These are host-country characteristics, which allow the foreign firm to minimize costs in supplying major markets due to market size, relative labor and material input prices. Among host-country characteristics are also restrictions to trade (tariff and non-tariff barriers), which may motivate FDI, as well as restrictions on FDI. Other recent studies stress the importance of agglomeration effects – usually summarized by the presence of other foreign companies in the host country, its degree of industrialization and its physical infrastructure, e.g. Wheeler and Mody (1992). Other factors which have been shown to affect the attractiveness of a host country as a location for FDI are its geographical proximity to the source country and major markets, which reduces transportation and transaction costs, but also affinities between home and host country such as shared language, culture, history, and institutions.

This chapter aims to test empirically one of the recent additions to the de-

terminants of FDI – the quality of the host country institutions. The quality of institutions – whether called investment climate, or governance infrastructure – as outlined in the previous section – has recently been incorporated into the studies of FDI determinants, and has been found to affect FDI inflows. Available empirical evidence consistently indicates that countries with better performing legal systems and contract enforcement mechanisms attract more FDI, controlling for other relevant factors, e.g. Bevan, Estrin and Meyer (2001), Campos and Kinoshita (2003), Shiells (2003), EBRD Transition Report (2003), and others. Globerman and Shapiro (2002) find strong evidence that governance infrastructure – encompassing the rule of law, the government's effectiveness and its regulatory burden, among others – is a significant determinant of FDI inflows across a large cross-section of countries.

In addition to the studies already mentioned, other empirical FDI studies pay attention to some variations of investor protection (intellectual property rights) and legal enforcement in the host country. While explicitly acknowledging that weak legal enforcement discourages FDI, Tao and Wang (1998) attempt to explain the puzzle of weak contract enforcement and the substantial flows of FDI under contractual arrangements (mostly contractual joint ventures) into China. Other studies relate contract enforcement to intellectual property rights protection. Thus, Smarzynska (2002) explores the effect of intellectual property rights (IPR) protection on FDI inflows in the transition economies, and finds that a regime of poor IPR protection has a negative impact on FDI inflows. This impact is particularly pronounced in technology-intensive sectors.

Typically, empirical studies have utilised available indices to proxy for institutional quality of the host country. For instance, Bevan et al. (2001) employ various EBRD index measures to proxy for institutional aspects, such as the indices of legal extensiveness and legal effectiveness for 1999 (composite indices based on the 1999 Legal Indicator Survey, Commercial Law section as published on a 1 to 4* scale in

the EBRD Transition Report 1999). Other indices they work with are the EBRD indices of bank and non-bank financial reform; indices of price, trade liberalisation and competition policy, and indices of main method of privatization. Other studies employ alternative measures to proxy institutions: Globerman and Shapiro (2002) use the Kaufmann et al. (1999) indices; Altomonte (2000) and Resmini (2000) employ the Operation Risk Index – a perception-based index, calculated on the basis of responses of experts about various aspects of the business environment.

Despite the different proxies for institutional quality employed in the related research, most studies emphasize the crucial role of the legal environment and mechanisms for contract enforcement and honoring of obligations. For example, Thornton and Mikheeva (1996) report findings from a survey of U.S. entrepreneurs who considered investing in the Russian Far East in the mid-1990s. Out of 11 different aspects of the investment climate, potential investors cited the legal system being too ambiguous and fluid as the major factor, which made them not invest. The second-rated factor was economic risk.

Other subsequent studies also point to the crucial role the court system, the legislative process and the legal infrastructure of the host economy play for attracting FDI. However, while researchers have augmented FDI equations with some measure of the host country's legal infrastructure, it is far from clear what aspects of the law, if any, affect foreign investment flows. Does the law on the books matter? Do some laws, such as intellectual property protection laws or competition laws, have a stronger impact than other laws related to commercial activity, e.g. company, secured transactions, insolvency laws? Or are these laws irrelevant? All these are questions, where theoretical and empirical work are yet to develop. In the area of intellectual property legislation, the evidence is that it does affect FDI – countries with better legal protection of intellectual property do attract more FDI, e.g. Smarzynska (2002). The opposite effect, however, appears to emerge with re-

spect to competition law. Countries with stricter competition law and policies do not appear to be attracting more FDI, i.e. the available evidence, e.g. Bevan et al. (2001), EBRD Transition Report 2003, suggests that investors are deterred by strict competition policy rules and attracted by the possibility of market power. On the other hand, it appears rather obvious that better working courts and contract enforcement mechanisms would be associated with less risk, and lead to more FDI, other things being equal. Associated risk would be lower due to less uncertainty and unpredictability of complex transactions with foreign customers and suppliers in a foreign country. Therefore, well functioning courts and legislative processes, including dissemination of the active laws, would reduce investment risk and attract FDI.

In this regard, the aim of this chapter is to assess whether contract enforcement – as perceived by lawyers' answers to the General Effectiveness section of the Commercial Law part of the 1999 Legal Indicator Survey – played a role in explaining FDI flows into the transition economies during 1999-2002. We next describe the main questions used to generate the legal data on contract enforcement. We also outline the model, the estimation method, and the other variables to be used in the estimations.

5.4 Data

5.4.1 Institutional Determinants: Contract Enforcement Data

The legal data on contract enforcement come from respondents' answers to the General Questions section of the 1999 Legal Indicator Survey. Traditionally, this section came after the sections of questions dealing with Pledge, Company and Bankruptcy laws in the respondent's jurisdiction, and sought answers to questions related to drafting and dissemination of laws; publication of court decisions; justification of

judgments and rights of litigants to appeal first-instance court judgments; presence of independent judicial review of administrative decisions; qualification and remuneration of first-instance court judges; judicial system's recognition of foreign judgments and arbitration decisions; duration of first-instance court procedure and duration of execution of a first-instance court decision in the country's largest commercial centre; perceptions about courts' impartiality, speed and the costs of using them; general confidence in the courts; and perceptions of crime and government corruption. Therefore, for the most part, the questions cover aspects of the work of the judiciary, and the regime for resolving disputes before them. These data, like the legal data from the rest of the LIS, have been cleaned systematically, checking for internal inconsistencies and coding errors, and corrected for missing values previously coded as zeros. As in previous chapters, we will take a disaggregated approach and break down the aggregate index, previously calculated as a simple average of all the questions in this section, into its individual components. Since all questions in this section refer to law enforcement and the functioning of the courts, no distinction was made in prior use of these data in terms of extensiveness and effectiveness. Rather, all questions were considered effectiveness-related, and the aggregate index was called GEN_EFF99 (general commercial law effectiveness in 1999). We retain this classification, and consider the section as entirely legal effectiveness or enforcement-related.

5.4.1.1 Dissemination of draft laws, new laws and court decisions

The first question of the contract enforcement section of the LIS – Q1– ask respondents how often legally trained personnel draft new commercial laws, and the answers are measured on a frequency rating scale of 1 to 5, with increasing values in increments of 1 indicating higher frequency (from "Never" to "Almost Always"). The weighting is as in other LIS sections for this type of question, with higher

frequencies attaining higher weights (from 0 to 1 in equal increments of 0.25). It reflects a rationale that it is beneficial to have legal experts engaged in drafting of commercial legislation. The next two questions – Q2 and Q3 – refer to the publication and dissemination of national laws related to investment activity. Q2 assesses the frequency with which respondents perceive such dissemination as happening throughout the country; Q3 assesses who is responsible for publishing the laws – whether the government, the private sector or both. The highest weight of 1 is given to answers, indicating that both the private sector and the government publish laws and disseminate them. Q4 assesses the speed with which laws affecting investment are published – with the highest weight given for publication of the laws within a month of their being passed. Q5 and Q6 assess the dissemination and discussion within the legal community of draft laws related to investment. Q5 examines the frequency with which such draft laws are published and accessible to lawyers, and Q6 – the frequency with which legal practitioners are allowed to comment on such draft laws. Both questions' weights favour the possibility of such review and commenting on draft legislation. Finally, Q7 and Q8 refer to the dissemination of important court judgments. Q7 assesses the frequency with which important judgments are published and made available to legal practitioners, while Q8 determines whether or not such court judgments are published within a year of their issuance. As before, all the frequency rating questions (Q5 to Q8) are weighted in the same rating scale, from 0 to 1, with higher weights attached to higher frequency ratings (in increments of 0.25).

We average the scores for each country across these 8 questions into an index of law dissemination – LAW_DISSEM. As outlined above, it measures the extent to which drafting new legislation is done in an open and transparent manner, with contributions from the professional legal community; and to what extent legal texts are published and distributed nationally. Since such efforts are made to address

informational asymmetries and to enhance the transparency of the legal process, it is expected that LAW_DISSEM would affect the regime of contract enforcement positively.

5.4.1.2 Procedural Regulations of Courts

Several questions assess the regulation of judicial process – whether judgments contain motivations for the decision in writing (Q10), whether there is a meaningful right of appeal against first-instance court judgments (Q11), and whether an independent right of judicial review of administrative decisions by government agencies exists (Q12). In addition, Q15 asks respondents whether their legal system recognises and enforces judgments issued by foreign courts (including foreign arbitration decisions), and does not mandate a new judicial re-examination and hearing on the merits of the case. All four questions are measured on the usual 1 to 5 frequency rating scale, with weights from 0 to 1. The weighting in the case of Q15 is straightforward – acceptance of foreign judgments and arbitration decisions can be beneficial – especially where the court system works with delays and is purported to be corrupt – because of speedier trials for those firms, who can afford it. Acceptance of foreign arbitral awards also assumes that the jurisdiction has adopted international legislation on arbitration, which can expand litigants' options to resolve disputes out of the courts. The weighting of the other three questions is somewhat more controversial. For instance, it is not clear whether mandating written reasoning for the court judgment is beneficial or not. On the one hand, written reasons allow for a legally justified judgment, and therefore reduce the opportunities to bribe the judge. However, some studies have shown that higher procedural complexity and more written elements of the court process – such as mandating a written, legally justified judgment – actually delay the first-instance process, and are associated with worse, rather than better, court performance, measured by duration of a standard

first-instance procedure over non-payment of a debt, e.g. Djankov et al. (2003a), World Bank (2004a), Slavova and Ryterman (2004), etc. Given this evidence, we leave it to the data to tell us whether or not provision of written reasons is beneficial or not. Finally, appeals and judicial review of administrative decisions are also thought beneficial in expanding the rights of litigants to seek a fair outcome. Again, Djankov et al. (2003a) caution that rights of appeal should be limited in straightforward cases, since appeals can be used strategically by judgment debtors to delay payment further. However, unlike Djankov et al. (2003a), the LIS does not investigate in detail the regulation of the appeal process, and we assume that the presence of appeal is a positive feature.

We average these four questions (Q10, Q11, Q12 and Q15) to arrive at the aggregate index of regulation of court process – REG_COURTS. Since the acceptance and execution of foreign judgments is likely to be of importance to multinational firms, which can avail themselves of courts and arbitration tribunals in their home jurisdiction, we will test this index separately in the regression analysis.

5.4.1.3 Confidence in the Courts

Two questions evaluate respondents' confidence in the court system. Thus, Q13 asks whether respondents believe that their country's courts would normally recognise and enforce their legal rights against other private parties; Q14 asks the same with respect to disputes with the government. Again both questions are measured on the usual frequency rating scale, with higher values recording higher frequencies and scoring higher points (a belief that courts would almost always enforce their rights against third parties scores 1, while a belief that courts would never do so scores 0). Trust in the courts is important, because it would in many cases determine court use. If litigants believe that courts will not recognise their rights, they will avoid using them.

We aggregate the answers to these two questions in an index of confidence in the courts – CONFID_COURTS. We expect it to affect FDI flows positively.

5.4.1.4 Perceptions of Court Performance

Aside from general confidence that the courts will uphold their contractual rights, three additional questions evaluate certain aspects of court performance, such as their impartiality and speed of delivering a decision, and the monetary costs of using them. Thus, Q17 asks whether the involvement of the court affects enforcement due to courts tending to protect the debtor; Q18 asks whether enforcement is affected because of high court fees; and Q19 asks whether enforcement is affected due to long court proceedings. All three questions share the usual 1 to 5 frequency ratings scale, with higher values indicating more frequent effects upon enforcement. In reviewing the data from these three questions, we corrected a prior error in the weighting structure. Previously an answer "Never" scored 0 points, and an answer of "Almost always" scored 1 point, with answers in between scoring 0.25, 0.5 and 0.75. However, lack of any effects upon contract enforcement due to high court fees, courts being pro-debtor (i.e. biased courts), and lengthy court proceedings, should, in our opinion, score the highest points since lack thereof would imply impartial courts, and fairly cheap and speedy judicial process. Therefore, we have reversed the weighs to these questions, with "Never" scoring 1 point, and "Almost Always" scoring 0, and accordingly in between. This is one example of a change in internal question weights[4].

The three questions' answers are aggregated in an index of court performance – COURT_PERF.

[4]We leave this question's weights open, since the previous weighting may also have been done with a view that effects upon enforcement as a result of existing high fees, lengthy procedures or biased judgments, are a positive feature, since they allow litigants to move away from the courts. However, such interpretation is very unlikely, given the wording of the questions.

5.4.1.5 Duration of Trial and Enforcement

Two questions also assess the expected duration of a first-instance court trial and execution of a first-instance court judgment. Thus, Q16 asks how long it takes a court in the country's most important commercial centre to conduct a hearing on the merits of the case (and presumably issue a judgment); Q20 examines how long on average it takes to execute a judgment over a payment of a sum of money, e.g. through seizure and sale of debtor's property. Both questions have the same answer options, specifying five different ranges. At one extreme is less than 6 months; at the other – more than 3 years. The intermediate options are "from 7 months to 1 year", "1 to 2 years", and "2 to 3 years". The shortest duration scores 1 point, the longest – 0 points, and scores are distributed in equal increments of 0.25. The average of the two questions gives the index of DURATION.

We also calculate the average number of days to get a judgment and enforce a judgment, using the mid-point values in each range.

5.4.1.6 Corruption and Crime

Four questions assess the general regime of law and order in the country, including corruption and crime. Corruption is found to be a strong deterrent of FDI in the literature, e.g. Wei (2000a, 2000b). Q21 assesses the frequency with which cases of corruption of public officials are investigated and prosecuted. Q24 asks whether government corruption is perceived to be declining, about the same or increasing. Q23 asks whether business-related crime in the country's most important commercial centre is declining, static or increasing. Finally, Q22 addresses an issue from the Securities Law section of the survey – whether insider dealing is prohibited by law. This question is asked here in its relation to overall business crime, and its effects on investment.

Q21 is weighted on a rating scale of 0 to 1, for higher frequencies; Q22 has the

typical Yes-No-Unclear answer scale, with positive answers getting 1 point; and Q23 and Q24 score 1 point each if corruption/crime are perceived to be declining, and zero otherwise.

We aggregate the answers to these four questions to arrive at the index of CORR_CRIME.

5.4.1.7 Judges' Qualifications

Question Q9 assesses the frequency with which judges in commercial and arbitration courts (the latter term is for the *arbitrazh* courts in the former Soviet Union, and does not refer to arbitration as such) are legally qualified. Higher reported frequencies of adequate qualifications gain higher scores, using the 0 to 1 weighting scale. Finally, an additional question – Q9a – previously not used in the generation of indices based on this section of the survey – assesses judicial salaries. It asks respondents to provide an estimate of the annual average salary of a private lawyer and an entry-level primary school teacher in their country, assuming that the annual average salary of a judge in a first-instance court is normalised to be 100. Thus, the aim is to assess the opportunity costs of being a judge rather than a private lawyer; and to assess how much judges earn compared to other public servants, such as teachers. The results indicate that the median wage of a judge across the whole sample of transition economies is 35.5% of the salary of a private lawyer. Judges earn least, compared to private attorneys, in Ukraine – 3.3%, and Russia – 8.8%, and the most – 66.7% in Armenia. Judges earn more than twice the average salary of primary teachers – the median across the sample is 235.3% of a teacher's average salary. Judges earn the most compared to teachers in Georgia – ten times more, and the least in FYR Macedonia and Romania, where court judges are reported to earn more or about the same as primary teachers. The scoring of this last question is as follows: half a point is awarded whenever the average salary of a judge – relative to

a private lawyer and relative to a teacher – is above the median, and zero otherwise. The maximum score is one, reflecting a relatively well-paid judiciary.

We aggregate Q9 and Q9a's answers into an index of judges' qualifications: JUDGES_QUAL.

5.4.2 Dependent variable

We use as a main dependent variable cumulative FDI inflows per capita over the period 1999-2002. The data are taken from the 2003 EBRD Transition Report, and cover all transition countries. The choice of years is determined by the availability of the Legal Indicator Survey data, which we wish to employ as a proxy for contract enforcement and institutional development. Since these data are for 1999, we are essentially testing how contemporaneous and future FDI flows are affected by the regime of contract enforcement[5]. It is true, however that the decade of the 1990s saw extensive legal reforms in the transition economies – brand new laws with regard to investment, finance, corporate governance, and commercial activity were adopted. Legal reforms were far too sweeping to assume that the laws remained constant.

In contrast, it may not be far from reality to assume that the contract enforcement and the institutional environment for legal implementation, have not changed much. In fact, most legal and economic studies of the late 1990s and later have argued, e.g. Pistor et al. (2000), EBRD Transition Report 1998, that legal enforcement lags behind legal text. The courts and other institutions for enforcing contracts, which existed prior to transition, are largely the same institutions today, and new specialized or small-claims courts, existent in many developed and emerg-

[5] An earlier version of this chapter used as a dependent variable cumulative inflows of FDI per capita from 1989 through 1998, which created methodological concerns about explaining FDI flows from time $t-n$ until time $t-1$ by the legal environment at time t. One may, however, justify such an approach on grounds that legal and, in particular, institutional factors change slowly over time, and for estimation purposes in large cross-country datasets may be assumed constant.

ing market economies, are very rare in transition countries. In fact, reforms of the judiciary – including independence, improvements in the physical infrastructure – court buildings, computers, filing and record systems, case management systems – and in training of judicial personnel have been undertaken only recently, mainly in the more advanced transition economies. In view of this, it may be justifiable to assume that the institutional environment for contract enforcement, as captured by the specific indices outlined above for 1999, may be a good proxy for the average institutional environment in preceding years. To test this, we also employ cumulative FDI flows per capita over the period 1989-2002.

Usually studies use FDI flows, either scaled by population or GDP. Some studies, however, use unscaled FDI data in millions of dollars, and control on the right-hand side of the regression equation for the scale variable, e.g. Garibaldi et al. (2001). Since we are conducting a cross-sectional estimation on a rather small sample of 23 countries, for which LIS data are available, we are constrained by the degrees of freedom with which we can operate, and have opted to use normalized FDI flows, scaled by population. Finally, we must note that the FDI inflows used in the chapter are net inflows, i.e. gross inflows less gross outflows. Globerman and Shapiro (2002) argue that FDI inflows and outflows are in a sense symmetrical – i.e. the factors which help attract FDI inflows to a country, also help it grow multinational firms, which invest abroad. Studying the determinants of FDI inflows and outflows separately, they present results largely in support of this view.

5.4.3 Macroeconomic Determinants

Macroeconomic stability is generally viewed as creating an environment conducive to foreign direct investment. Among the macroeconomic determinants included in related studies are a multitude of variables, such as inflation, lagged economic growth, the fiscal balance, and the exchange rate regime. Usually evidence suggests

that inflation has a negative effect upon FDI inflows since foreign investors are wary of markets with rising prices. The expected sign on past and expected GDP growth is more ambiguous. One may argue that investors prefer growing economies, which benefit from higher demand and relative political and social stability. However, one may also argue that recessions increase the marginal product of new capital by freeing resources, and perhaps by lowering asset prices.

We control in the regressions for both past inflation and GDP growth. Growth (GDPGR) is employed as a control variable because it captures the macroeconomic environment and sends signals to potential foreign investors about the growth prospects of a given economy. Real GDP growth is average real GDP growth for 1996, 1997 and 1998 and, the data come from EBRD 1998 Transition Report. The choice of years is determined by the need to include lagged growth, and by an attempt to start in the mid-1990s, when restructuring efforts had already started in earnest across most transition economies as well as to avoid the output decline of the early 1990s.

We also control for past inflation (AVINFL). The inflation measure is averaged over the period 1994-1999, and is the same as used in Chapters 3 and 4. It covers a somewhat longer period than growth in order to smooth out inflation fluctuations. We also test a second measure of inflation, averaged over 1996-1998. The results are qualitatively the same.

5.4.4 Size of Economy and Local Demand

Market size is often regarded as a major determinant of FDI. Notably though, it depends on the main function of foreign projects - to serve local markets or to be export-oriented. Thus, Lankes and Venables (1996) establish that local market size is more important for those transition economies, where projects predominantly serve local demand. Since we already normalize FDI flows by population, we can use

data on aggregate host-economy gross national income (GNI) data for the period 1996-1998 to proxy for market size We also take GNI data for 1998. These data come from the World Development Indicators 2003, World Bank (2004b), and are in current US dollars and calculated according to the Atlas method. We employ the natural logarithm of GNI98 in the regressions.

A measure for demand – which should affect market-driven FDI – is also GDP per capita in the host country. This is another standard market-seeking FDI determinant in the related literature. We therefore employ the natural logarithm of GDP per capita in 1999 (LGDPPC99).

5.4.5 Distance

Distance is a variable that has been frequently used in the international trade literature, using arguments similar to those in Krugman and Venables (1990, 1995). Proximity to Western Europe might be beneficial due to lower transport costs, shared history of capitalist institutions and markets, similar historical and cultural past, lower perceived risk on the part of Western investors, etc. Geographical distance is now routinely used in gravity models of international trade, but is also used in the FDI literature as a proxy for cultural affinities between the source and host countries, and also as a measure of transportation and transaction costs. We chose to include the distance in kilometres between each of our sample countries' capital city and Vienna (DIST_VIEN) because Austria features among the major Western trading partners and investors in Eastern Europe. The distance measures are obtained online at *www.indo.com/distance.*

5.4.6 Costs

Finally, unit labor costs in the host country relative to the source country are among the determinants of efficiency-seeking FDI. However, unit labor costs are hard to

come by for a cross-section of all transition economies on a consistent basis. One approach is to employ average wages in manufacturing – as a measure of relative labor costs. Wages however have often been found a poor determinant of FDI – it is the joint interaction of labor productivity and wages that determines relative unit labor costs, and should matter for FDI. Therefore, we will ignore labour costs considerations, and leave them out of the estimated model.

5.4.7 Some methodological concerns

As mentioned earlier, we would like to test for the effect of disaggregated index measures of the contract enforcement environment on FDI inflows in transition economies. Potential problems involve multi-collinearity – for instance some of our independent variables display high and significant correlation (Table 5.1). This, the DIST_VIEN variable is correlated with some of our legal measures – it has a coefficient of correlation with LAW_DISSEM of -0.73, which is statistically significant. It is also correlated with the REGUL_COURTS index – coefficient of -0.46, which is also significant at the 5% level. Furthermore, GDP per capita is correlated significantly with most of the indices of the institutional environment, as well as with the average inflation (AVINFL) and distance (DIST_VIEN) measures.

5.5 Regression Results

5.5.1 Legal Dissemination

We are interested in determining the impact of the overall contract enforcement environment – as captured by the indices related to the work of the courts described in the previous section. Unlike in earlier chapters, we do not make a distinction between legal extensiveness and effectiveness indices. Rather, we focus on the general effectiveness or enforceability regime. Our initial conjecture is that a better contract

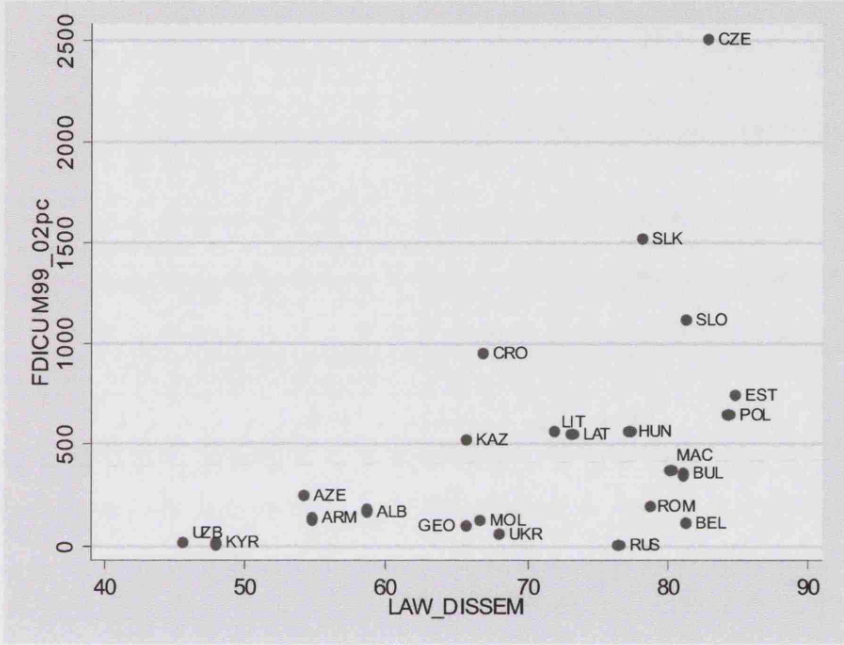
Table 5.1: Correlation Between Independent Variables

	LAW_DISS	REG_CO	CONFID_CO	SHORT_PR	AVINFL	GDPGR	LGNI98	DIST_VIEN
REG_COURTS	0.43**							
CONFID_COURTS	0.51**	0.53***						
SHORT_PROC	-0.51**	-0.55***	-0.53***					
AVINFL	-0.26	-0.18	-0.11	0.18				
GDPGR	-0.11	0.01	-0.03	-0.09	0.37*			
LGNI98	0.41*	0.14	0.29	-0.53***	0.06	-0.13		
DIST_VIEN	-0.73***	-0.46**	-0.30	0.45**	0.36*	0.08	-0.31	
LGDPPC99	0.76***	0.37*	0.43*	-0.54***	-0.45**	0.14	0.32	-0.69***

Note: The table reports pairwise correlation coefficients. *** Significant at 1%; ** significant at 5%, * significant at 10%.

enforcement environment should exert a positive influence on FDI inflows, other things being equal. Also, in line with previous empirical studies of obstacles to FDI, we would expect that the enforceability of commercial contracts and the efficiency of the judiciary would be of high significance for foreign investors, compared to other institutional factors such as competition policy in the host economy, e.g. Table 5.1 in Chapter 5 of 2003 EBRD Transition Report. When Bevan et al. (2001) study the effect of the legal environment on FDI inflows in transition economies, they differentiate between legal extensiveness and legal effectiveness (as per the EBRD definitions). Since the two measures are correlated, however, they are unable to say which one is dominant. In fact, in earlier chapters we have demonstrated that some of these measures may be biased due to many effectiveness questions essentially being unrelated to enforcement, as well as due to treatment of missing observations. Our approach here is to use more disaggregated data from the same survey, which

Figure 5.1: Cumulative FDI per capita, 1999-2002, and Index of Legal Dissemination



directly relates to court enforcement.

What does our approach reveal? We first look at the set of indices pertaining to dissemination of laws, and legislative processes, including commentary and publication of draft laws. We first test for the effect of the aggregate index of LAW_DISSEM on cumulative FDI flows per capita from 1999 through 2002 (FDICUM99_02), controlling for average inflation (AVINFL), (lagged) growth (GDPGR) and economy size – the logarithm of gross national income in 1998 (LGNI98). We find a statistically significant and positive effect of the LAW_DISSEM index on FDI flows. Inflation and past growth are also significant and their coefficients have the correct signs. The economy size measure – LGNI98 – is not significant, and is dropped from the regression. Indeed, the logarithm of GNP is found insignificant in all regression specifications that follow, so we omit it hereafter. It is, perhaps, surprising that we find market size not to affect FDI inflows.

Table 5.2: Law Dissemination and Foreign Direct Investment Inflows, 1999-2002. OLS Estimations

Independent variable	FDICUM99_02	FDICUM99_02	FDICUM99_02	FDICUM99_02	FDICUM99_02
LAW_DISSEM	18.3027**	20.8806**			
	(7.5431)	(8.8142)			
LAW_DRAFT			14.4633**		
			(6.5171)		
LAW_PUBL				18.0666**	
				(8.5069)	
PRIV_PUBL					21.4179**
					(8.4400)
AVINFL	-0.9235**	-0.8564***	-1.2292***	-1.1223***	-1.3655***
	(0.3256)	(0.2768)	(0.3096)	(0.2930)	(0.4219)
GDPGR	53.9386**	50.7691**	43.2876**	42.2761*	62.5274***
	(21.5774)	(20.2096)	(20.6316)	(21.6530)	(20.6770)
LGNI98	47.3192				
	(84.3284)				
Intercept	-1918.9	-1001.0*	-501.1	-1062.9	-1529.4*
	(1945.269)	(542.1156)	(347.9138)	(642.5683)	(769.2717)
Number of observations	23	23	23	23	23
F test	4.51**	5.82***	6.05***	6.03***	5.31***
	[0.0106]	[0.0054]	[0.0045]	[0.0046]	[0.0079]
Adjusted R-squared	0.38	0.37	0.33	0.34	0.28

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-tests.

The same results also hold if we employ as a dependent variable cumulative FDI flows per capita over the years 1989-2002 (FDICUM89_02). The fit in the latter regression is better.

We interpret these results to mean that greater transparency and openness of the legislative process – through timely publication of new laws and allowing legal practitioners access to draft and new legislation as well as publication of important court judgments – are supportive of more investment. This is hardly surprising since more legal information and distribution of such can alleviate asymmetric information in the market, particularly for foreign investors. It also probably means that the court system itself is more transparent and effective.

We also test for each individual question, which is included in the index of LAW_DISSEM. We find that the individual sub-indices of LAW_DRAFT (the degree to which legally trained personnel draft legislation), LAW_PUBL (the degree to which laws are published and distributed across the country), PRIV_PUBL (both private and public sectors publish laws) are significant in the FDI regressions. Timely publication of investment laws (TIMELY_PUBL), and publication of important court decisions (COURT_DEC_PUBL) are also marginally significant. Thus, only the sub-indices based on Q5 and Q6 – on drafting and commentary of draft laws – are not significant.

A scatter-plot of FDI inflows against the aggregate index of legal dissemination (LAW_DISSEM) is given in Figure 5.1 and the regression results are shown in Table 5.2. Figure 5.1 shows that the Czech Republic attracted by far the highest volume of FDI per capita from 1999 to 2002, followed by the Slovak Republic, Slovenia, Croatia, Estonia and Poland. Among the top 10 destinations are the eight new E.U. members plus Croatia and Kazakhstan. Kazakhstan's relatively high FDI flows are very likely due to its rich natural resource base; in the case of Croatia higher FDI since 1999 is probably due to better prospects after the end of the Tudjman era in

end-1999, and prospective E.U. membership.

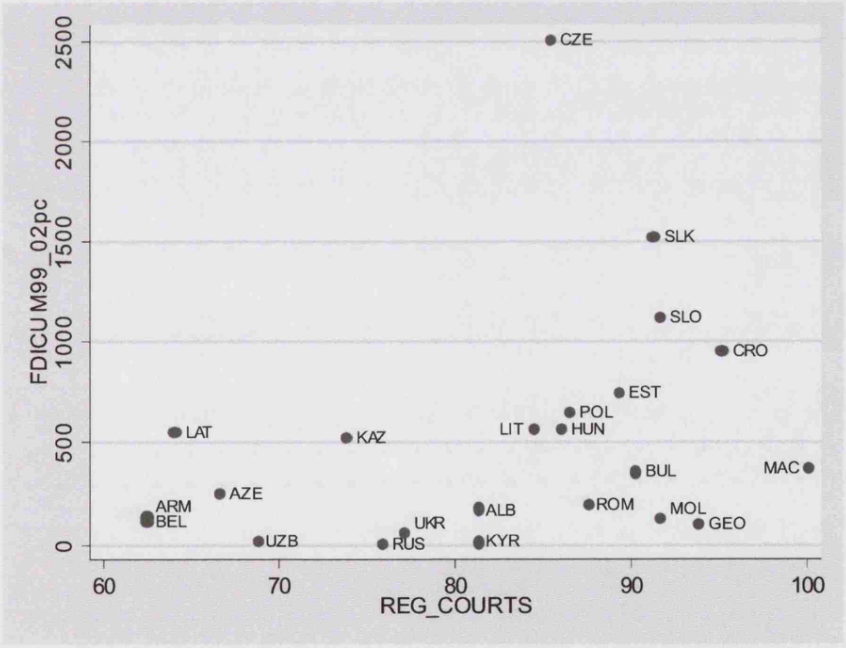
Another important observation from Figure 5.1 (as well as Figures 5.2 to 5.4, which follow) is that the Commonwealth of Independent States (CIS) countries have attracted very low levels of cumulative FDI per capita over the period 1999-2002 despite wide differences in the measures of legal dissemination and the other enforcement indices. In other words, for the CIS group of countries (Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan, Moldova, the Russian Federation, Ukraine, Uzbekistan), and to a lesser degree for Kazakhstan, there appears to be no correlation between the legal measures of contract enforcement and the flows of FDI per capita (FDICUM99_02). This could be due to the effects of the Russian financial crisis of 1998, but deserves further investigation.

5.5.2 Regulation of Court Process

We also want to establish the effects on FDI of the regulation of judicial process with respect to rights of appeal, superior judicial review of administrative decisions, requirements for written motivation of court judgments, and recognition of foreign judgments and arbitration decisions. As mentioned earlier, available evidence, e.g. Djankov et al. (2003a), suggests that written elements and access to appeals may be detrimental to fast delivery of judicial services. However, speedy justice may forgo a certain degree of fairness. There may be a trade-off between fast and fair procedures, and foreign investors may be more sensitive to one than the other. What do the data tell us?

First, upon examination of the scatter diagram of cumulative FDI flows per capita from 1999 through 2002 (Figure 5.2), we find that the Czech Republic is again somewhat of an outlier. We also note that Latvia scores rather low on this index, while FYR Macedonia scores the maximum points, the highest score in the sample. Georgia and Moldova also score in the high-end of the scale. Nevertheless,

Figure 5.2: Cumulative FDI per capita, 1999-2002, and Index of Regulation of the Courts



we observe a positive relationship between the index of REG_COURTS and FDI inflows. Indeed, the econometric results indicate that the index of regulation of court process is statistically significant and has a positive coefficient in the regressions for both alternative dependent variables, i.e. for cumulative FDI per capita from 1999 through 2002, and for cumulative FDI per capita from 1989 through 2002. These results are qualitatively the same as those for the aggregate index of LAW_DISSEM above. Among the control variables both GDP growth and inflation are significant, the logarithm of GNI in 1998 is not significant.

Therefore, we find evidence which indicates that foreign investors respond to a well-regulated judicial process. However, it is interesting to see which ingredients of the REG_COURTS index actually account for its significance. A breakdown into its four components, and running the same regressions with each of these sub-indices one at a time, reveals that the sub-index of judicial review of administrative decisions (JUD_REVIEW), i.e., whether a party can appeal an government agency decision before the courts, and the sub-index of a right to appeal of first-instance judgments (APPEAL) affect FDI positively and significantly. Surprisingly, host country recognition of foreign court decisions and arbitration awards does not have an impact upon FDI. Further, requirements for provision of written reasons for a judgment are also found insignificant, albeit with a positive sign.

The result for the right of judicial review of administrative decisions (JUD_REVIEW) has the highest level of significance, and is robust to alternative specifications. Therefore, it appears that while foreign investors are attracted to judicial systems with a clear right of appeal, they are more concerned about their rights of appeal against government decisions, which is what the JUD_REVIEW index measures.[6]

[6]This finding is consistent with recent evidence by Acemoglu and Johnson (2003) about the stronger influence of property rights institutions (proxied by risks against government expropriation), and private contacting institutions (proxied by judicial formalism) on major economic outcomes such as long-run growth, investment and private credit across a sample of former colonies.

Table 5.3: Regulation of Court Process and Foreign Direct Investment Inflows, 1999-2002. OLS Estimations

Independent variable	FDICUM99_02	FDICUM99_02	FDICUM99_02	FDICUM99_02	FDICUM99_02
REG_COURTS	11.2569**	13.3726**			
	(4.4615)	(5.0867)			
JUD_REVIEW			10.9489**		
			(4.4619)		
APPEAL				11.4517*	
				(6.7960)	
WRITTEN_JUDG					11.1491
					(7.8814)
AVINFL	-1.0758***	-0.9798***	-0.9254***	-0.9688***	-1.0970***
	(0.3109)	(0.2563)	(0.2468)	(0.2413)	(0.3380)
GDPGR	53.7453**	46.2484**	41.6043*	47.3044**	44.0821*
	(22.3289)	(20.3945)	(22.1412)	(21.9964)	(21.1338)
LGNI98	99.6113				
	(94.0330)				
Intercept	-2742.3	-591.3	-399.0	-517.5	-487.1
	(2063.272)	(359.3667)	(274.7917)	(491.8509)	(582.8759)
Number of observations	23	23	23	23	23
F test	4.41**	6.08***	6.56***	5.63***	4.22**
	[0.0117]	[0.0044]	[0.0031]	[0.0062]	[0.0190]
Adjusted R-squared	0.32	0.27	0.29	0.27	0.24

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-tests.

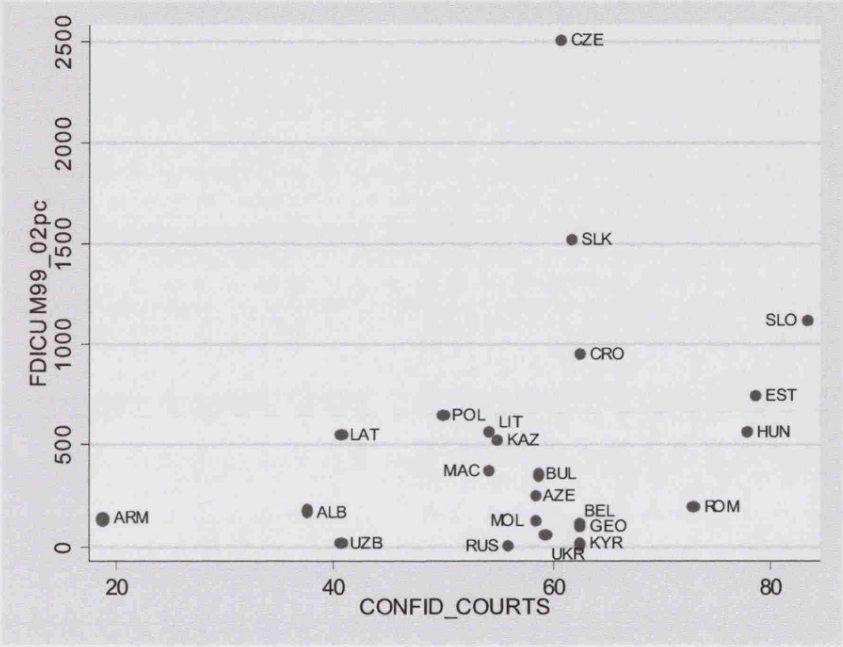
A scatter-plot of FDI inflows against the index of regulation of court process is shown in Figure 5.2; the regression results are shown in Table 5.3.

5.5.3 Confidence in the Courts

A separate index measures lawyers' perceptions of litigants' confidence in the courts – the index CONFID_COURTS averages perceptions that courts will recognise and enforce legal rights of litigants against other private parties, and against the state. As mentioned in the earlier section, such confidence measures can determine how much parties use the courts to resolve disputes. Similar indices of confidence in the legal system to uphold litigants' contractual and property rights in business disputes have been developed by the EBRD-World Bank Business Environment and Enterprise Performance Surveys 1999 and 2002 (BEEPS99 and BEEPS02), which are firm-level surveys measuring various institutional obstacles to doing business, among which – the judicial system. Keren and Ofer (2002), for example, look at FDI in services – encompassing trade and financial services – in transition economies, and emphasize the crucial importance the quality of law and order, including the quality and fairness of the justice system. They argue that total FDI and FDI in trade are heavily dependent on investors' trust in law enforcement, which they proxy by the corruption perceptions index of Transparency International. They also attempt using the aggregate EBRD indices of commercial and financial law for 2000, but find them insignificant (these are the indices measured on a 1 to 4* scale, using the LIS data for 2000).

The confidence index that we use – CONFID_COURTS – shown against cumulative FDI flows per capita from 1999 until 2002 in Figure 5.3, is highest in Slovenia, Estonia and Hungary, and lowest in Armenia, Albania and Uzbekistan. Latvia scores rather low, while the Czech Republic, the Slovak Republic, and Croatia score similarly to Belarus, Georgia and Kyrgyzstan, even through they have recorded much

Figure 5.3: Cumulative FDI per capita, 1999-2002, and Index of Confidence in the Courts



higher FDI inflows. Despite these outliers, the confidence index and FDI inflows display a positive relationship.

Testing the effect of CONFID_COURTS on FDI inflows (using the three different specifications of the dependent variable) shows that the confidence measure is significantly and positively associated with FDI inflows. As before, inflation and growth are also significant statistically, with the expected signs of the coefficients, whereas the logarithm of GNI in 1998 is not. Using both cumulative and average annual FDI data does not alter these results. Therefore, we find evidence that a higher level of trust in the court system generates higher investment from abroad.

Finally, it is worth exploring whether both ingredients of the CONFID_COURTS index are equally important for investment. We find some interesting results: it turns out that foreign investment is much more sensitive to ability of the judicial system

Table 5.4: Confidence in the Courts and Foreign Direct Investment Inflows, 1999-2002. OLS Estimations

Independent variable	FDICUM99_02	FDICUM99_02	FDICUM99_02	FDICUM89_02
CONFID_COURTS	9.8803**			
	(3.5839)			
CONFID_STATE		12.0507***		25.1677***
		(3.9045)		(5.5847)
CONFID_PRIVATE			3.4408	
			(4.5183)	
AVINFL	-1.0451***	-0.8567***	-1.1368***	-1.3292***
	(0.3166)	(0.2546)	(0.3826)	(0.3513)
GDPGR	49.2478**	52.4344**	48.5852**	94.8005***
	(22.2903)	(21.6319)	(21.7970)	(27.3185)
Intercept	-64.0	-136.0	296.7	-475.9
	(211.8136)	(204.8186)	(312.8981)	(308.2769)
Number of observations	23	23	23	23
F test	5.29***	6.71***	3.67**	19.97***
	[0.0080]	[0.0028]	[0.0308]	[0.0000]
Adjusted R-squared	0.26	0.31	0.21	0.46

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-tests.

to protect and enforce their rights against state, i.e. government, parties rather than other private parties, i.e. other firms or individual litigants. This is a very intuitive finding: indeed, foreign investors deal with the host-country government and local authorities, and the risk of government expropriation probably makes them aware of the need for judicial protection against government decisions. Yudaeva et al. (2003), for instance, give as an example the high level of government – particularly regional and local government – interference with the decisions of foreign companies in their jurisdiction in Russia.

In this regard, the regressions we conduct –shown in Table 5.4 – indicate that for all three types of FDI flows confidence in the courts to recognise and enforce litigants' rights against the state (CONFID_STATE) is highly significant at the 1% level and has a positive impact on FDI inflows. The other controls behave as before – only inflation and growth are significant. In contrast, confidence in the courts to uphold litigants' rights against other private parties (CONFID_PRIVATE) is not statistically significant in any of the regression estimations. Thus, we find considerable evidence that the index of CONFID_STATE drives the result of the aggregate index, and that it is a good proxy for confidence in the judiciary.[7]

5.5.4 Perceptions of Court Performance and Duration of Trial and Execution of Judgment

Trust in the courts to uphold their contractual and property rights in disputes is related to investors' perceptions of court performance – in terms of speed, costs and unbiasedness. The LIS respondent lawyers – presumably themselves users of the courts – were asked to evaluate court performance along these three dimensions.

[7]Again, this is in line with recent findings that property rights institutions, protecting from expropriation by the state, are more relevant for economic outcomes than private contracting institutions, around which economic agents can contract.

These results are somewhat unexpected: the aggregate index of court performance (COURT_PERF) affects FDI inflows negatively and significantly, i.e. countries with better performing courts appear to get significantly less FDI. At first glance, this does not square with the findings on confidence in the courts above. Upon closer inspection, however, and taking into account the related data on duration of trial and execution, the results begin to make more sense. Thus, of the three component sub-indices of COURT_PERF, only the one related to the speed of court proceedings – SHORT_PROC – is significantly associated with lower FDI. The other two measures – on costs and impartiality towards debtors and creditors – have no impact upon FDI.

Figure 5.4 depicts the negative relationship between perceptions of speediness of procedures and FDI – we see that the countries that score highest on speed of the court, i.e. have the shortest procedures, are Armenia, Azerbaijan, Moldova, Kazakhstan and Estonia. The countries which report that enforcement is affected because of lengthy court proceedings are Slovenia, Poland, Croatia, and the Czech Republic – essentially the transition region's leaders in attracting FDI. These findings are supported also by the more quantitative questions in this section, which ask about duration of trial until judgment is delivered and duration of enforcement. Using the weighting described above in the previous section, assigning higher weights to shorter reported duration, we find that the aggregate index of duration of trial and execution (DURATION) is negatively and significantly associated with FDI inflows (using the three different dependent variables). Since this index is an average of the indices of duration of trial (DUR_TRIAL) and duration of execution (DUR_EXEC), we test for their separate effects, and find that it is the former which drives the result on the aggregate index rather than the latter. Both indices have negative signs in our main regression, but the index of duration of trial (DUR_TRIAL) is significant in all specifications, while DUR_EXEC is never significant.

Figure 5.4: Cumulative FDI per capita, 1999-2002, and Index of Short Court Procedure

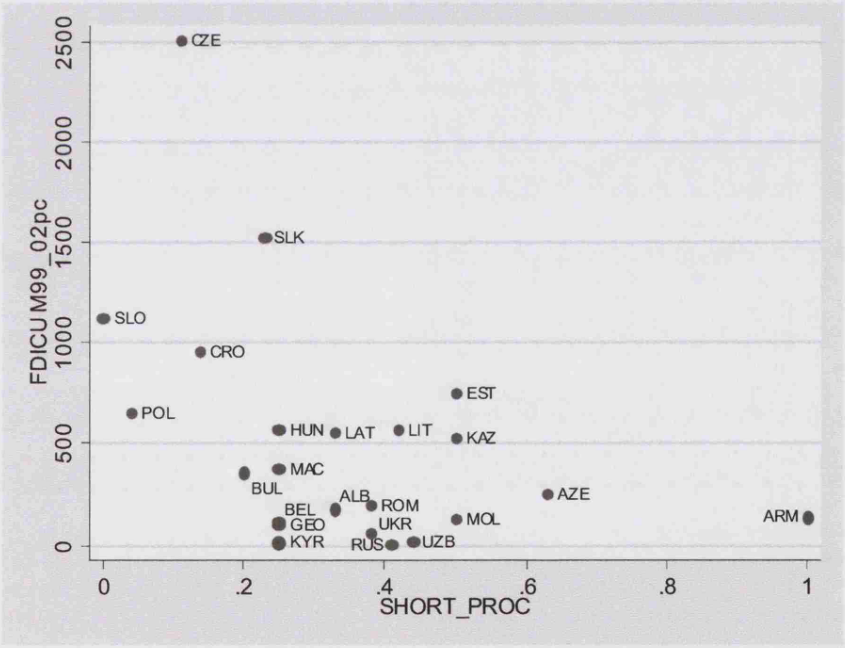


Table 5.5: Perceptions of Duration of Trial and Court Performance and Foreign Direct Investment Inflows, 1999-2002. OLS Estimations

Independent variable	FDICUM99_02	FDICUM99_02	FDICUM99_02	FDICUM99_02	FDICUM99_02
COURT_PERF	-11.0814**				
	(5.2293)				
SHORT_PROC		-9.7793*			
		(5.4064)			
DURATION			-15.9197*		
			(8.1820)		
DUR_TRIAL				-18.1003**	
				(7.4067)	
DUR_EXEC					-7.6230
					(6.2065)
AVINFL	-0.8459**	-0.8960***	-1.1665***	-1.1827***	-1.1340**
	(0.3409)	(0.2472)	(0.3336)	(0.2709)	(0.4007)
GDPGR	47.9113**	39.5852*	30.074	26.4117	40.6365*
	(20.8390)	(22.6570)	(23.4607)	(24.0772)	(21.3020)
Intercept	1097.1***	844.8**	1636.8**	2015.0**	958.5*
	(359.0588)	(300.8193)	(680.9039)	(718.04)	(470.2392)
Number of observations	23	23	23	23	23
F test	6.70***	4.75**	6.58***	6.66***	5.10***
	[0.0029]	[0.0123]	[0.0031]	[0.0029]	[0.0093]
Adjusted R-squared	0.25	0.32	0.37	0.43	0.27

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-tests.

We have also calculated the average number of days for trial and enforcement of the judgment based on the questions used to generate DUR_TRIAL and DUR_EXEC. Since respondents specified duration in ranges, we used the mid-point of the range to estimate the number of days. For the top range we used the minimum as the average number of days. The results indicate that trial times are highest in Slovenia (670 days), Georgia (548 days), Poland (487 days), and Croatia (442 days). The shortest duration of trial is reported in Azerbaijan and Kazakhstan (105 days). In terms of days of execution of judgment the rankings are similar: Hungary (794 days), FYR Macedonia (791 days) and the Slovak Republic (731 days) have the longest duration, while Kazakhstan (266 days), Latvia (261 days) and Moldova (225 days) have the shortest duration.

We compare these duration data with available data on duration of contract enforcement in a standard debt collection cases, reported by the World Bank Doing Business database – World Bank (2004), using the methodology of Djankov et al. (2003a). The Doing Business data cover all transition economies in our sample, with the exception of Estonia. We find that the Doing Business duration of contract enforcement to be shorter than the sum of the average days of trial and days of execution from the LIS data – something expected since Doing Business impose a series of assumptions about the case, and in some countries, such as Lithuania, the average duration does not apply to a court process, but to an administrative process for debt collection. However, our measures correlate positively and significantly with the Doing Business measure of duration. Thus, the correlation coefficient of the Doing Business (DURATION_DB), and the our measure of TOTAL_DAYS (trial and execution days) is 0.63, which is significant at the 1% level. The correlation between DURATION_DB and DAYS_TRIAL is similar in magnitude - at 0.64, and also significant at the 1% level, whereas the correlation coefficient between DURATION_DB and DAYS_ENF is lower – at 0.46, and significant at 5% only.

Thus, our results on duration of court procedures – as generated by lawyers' opinions in the 1999 LIS – are very much in line with other available data measuring the speed of contract enforcement.[8]

The findings of the impact of speediness of court trials may reflect the judicial structure of transition economies – many of the CIS countries have instituted specialized commercial courts – the so-called *arbitrazh* courts – which are purported to be fast in delivering justice in commercial cases. In contrast, such courts do not operate in Central and Eastern Europe, where civil procedures are also more burdensome – these countries mostly belong to the German civil law tradition, which is associated with a more regulated trial process. Another possible interpretation of the results on duration is that perhaps courts in the more advanced transition economies are more heavily used – which would explain why respondents have more confidence in them – but heavy use creates backlogs and delays. Clearly, more research into this is warranted to explain the data patterns satisfactorily.

5.5.5 Corruption and Crime

Finally, our corruption- and crime-related indices – CORR_CRIME – and its constituent parts are not significant for FDI inflows. Similarly the index of judges' qualifications and remuneration is also insignificant. Both insider trading prohibitions and having judges with legal qualifications has a positive impact on FDI inflows, but none of the results are significant. Therefore, we do not discuss these further. Some of these data are suspect since questions ask about the trend in crime and corruption, but it is not clear how big a problem each is to begin with. In a similar fashion, there are some doubts about the answers to the question on existence of legal prohibitions of insider dealing. A similar question is also asked in the secu-

[8]The Doing Business data are as of January 1, 2003, and based on a questionnaire of law firms as well.

rities regulation section of the survey (presented in Chapter 3), and yields different results for some countries. This suggests that answers may be subject to question order effects – for instance asking questions on insider dealing in conjunction with questions on crime and corruption may elicit different attitudes and answers from those elicited from respondents when they are merely asked a series of questions on the securities market laws. The divergence may also be due to different lawyers completing the commercial and financial sections of the LIS – even if they are from the same law firm. Therefore, the results are prone to biases of this nature.

However, where possible, we have made comparisons with other available data, and find that the LIS data are corroborated by other existing sources, such as the duration of trial and execution data from this particular section of the survey.

5.6 Robustness Tests

As illustrated in Table 5.1, most of our legal variables are correlated with the distance and GDP per capita. We have run some robustness tests, isolating the impact of DIST_VIEN in a first stage regression, and then adding to the regression our main legal variables of interest. The results indicate that among the legal variables only the index of APPEAL retains significance at the 5% level, while CONFID_STATE just misses significance at 10%. The rest of the legal measures lose significance. These results appear in Table 5.6.

Second, repeating the same procedure for GDP per capita, leaves our main legal variables, together with the inflation and growth controls, insignificant.

We do not present these results, but they suggest that GDP per capita has a strong explanatory power over FDI inflows. Once its effect is accounted for, the legal and other measures lose significance.

Table 5.6: Foreign Direct Investment Inflows, 1999-2002. OLS Estimations, Controlling for Distance to Vienna

Independent variable	Residual of an OLS regression of FDICUM99_02 on DIST_VIEN and a constant.		
APPEAL	12.5613** (6.0825)		
CONFID_STATE		6.0302 (3.7986)	
CONFID_PRIVATE			1.4549 (4.2851)
AVINFL	-0.5359** (0.2523)	-0.5634** (0.2322)	-0.7014** (0.2672)
GDPGR	42.9129** (19.2397)	46.9042** (19.3893)	45.0639** (19.1897)
Intercept	-1169.3** (430.7755)	-363.3 (223.2277)	-129.9 (315.0316)
Number of observations	23	23	23
F test	6.80*** [0.0027]	3.61** [0.0322]	3.84** [0.0265]
Adjusted R-squared	0.23	0.17	0.13

Note: *** significant at 1%. ** significant at 5%. * significant at 10%. Robust standard errors shown in parentheses next to coefficient estimates. P-values shown is square brackets for the F-tests.

5.7 Conclusions

We have conducted a simple empirical analysis of the relationship between the contract enforcement environment and cumulative flows of per capita FDI on a sample of 23 transition economies over the period 1999-2002, using legal data from the 1999 EBRD Legal Indicator Survey. We find evidence that legal factors – such as the degree of publication and dissemination of laws and court decisions, the protection of litigants' rights of appeal and judicial review of government decisions, and investors' confidence that the courts will uphold their property and contractual rights

against state parties – act as significant institutional determinants of FDI. The results suggest that court enforcement and the legal regime, as encompassed in our legal indices, act as significant determinants of FDI in our sample of economies.

The results indicate that foreign investment is sensitive to available information on laws, and transparency and quality in the legal drafting process, as well as to well-protected rights of appeal before a higher-level court. In particular, foreign investors appear to try to reduce the risk of expropriation by ensuring that host countries protect their right of judicial review of government decisions, and by investing in countries where courts are believed to respect private litigants' rights in disputes with the state. This finding resonates well with recent contributions to the literature on institutions and comparative development, e.g. Acemoglu and Johnson (2003), who find that property rights institutions explain better economic and financial development than contracting institutions. They conjecture that this is due to inability of individuals to re-contract with the government.

Needless to say, these results are only initial and would benefit from confirmation as and when further data become available. As emphasized in earlier chapters, the nature of the legal variables is perception-based as of June - July 1999, and the use of a survey of lawyers to generate information about the legal environment may introduce some methodological concerns, as discussed in chapter 2. Furthermore, we cannot exploit the dynamic character of the FDI data since the legal survey data are available for one year only in a systematic manner.

Despite these caveats, the present chapter demonstrates that the legal environment and the mechanisms for creating and applying the law help to explain FDI flows.

Appendix 5.A Data Tables

Table 5.7: Description of Variables

Variable	Description
FDICUM99_02	Cumulative flows of FDI per capita, 1999-2002.
FDICUM89_02	Cumulative flows of FDI per capita, 1989-2002.
GDPGR	Average growth rate of real GDP, 1996-1998.
AVINFL	Average annual rate of inflation, 1994-1999.
LGNI98	Logarithm of real Gross National Income (Atlas Method) 1998.
LGDPPC99	Logarithm of GDP per capita, 1999.
DIST_VIEN	Geographical distance of capital city to Vienna, Austria.
LAW_DISSEM	Index of dissemination of new commercial laws.
LAW_DRAFT	Index of drafting process of new laws.
LAW_PUBL	Index of publicaiton of new laws across country.
PRIV_PUBL	Index of both private and public sector publishing new laws.
REG_COURTS	Index of regulation of court process.
JUD_REVIEW	Index of availability of judicial review of an administrative decision.
APPEAL	Index of availability of appeal from a first-instance judgment.
WRITTEN_JUDG	Index of requirements for a written reasons for a judgment.
CONFID_COURTS	Index of confidence in the courts.
CONFID_STATE	Index of confidence in the courts to uphold rights against the state.
CONFID_PRIVATE	Index of confidence in the courts to uphold rights against private parties.
COURT_PERF	Index of perceptions of court performance.
SHORT_PROC	Index of perceptions of short judicial process.
DURATION	Duration of a first-instance commercial case.
DUR_TRIAL	Duration until a first-instance commercial case judgment is issued.
DUR_EXEC	Duration of execution of a first-instance commercial case judgment.

Table 5.8: Economic Variables by Country

Country	FDICUM99_02	FDICUM89_02	GDPGR	LGNI98	DIST_VIEN
Albania	172	303	3.7	21.7	815
Armenia	131	243	5.0	21.3	2403
Azerbaijan	248	625	4.6	22.1	2597
Belarus	109	181	6.1	23.5	1006
Bulgaria	353	560	-2.6	23.1	818
Croatia	954	1419	5.6	23.8	270
Czech Republic	2493	3554	1.3	24.7	251
Estonia	744	1846	6.8	22.3	1361
FYR Macedonia	376	467	2.4	22.0	799
Georgia	96	210	10.2	24.5	2342
Hungary	570	2253	3.4	23.8	233
Kazakhstan	527	938	1.2	21.3	4624
Kyrgyzstan	10	85	5.9	22.5	4475
Latvia	552	1304	4.6	23.0	1103
Lithuania	573	1024	4.5	22.1	950
Moldova	128	199	-1.4	21.3	946
Poland	651	1007	6.1	25.7	590
Romania	193	415	-2.6	24.3	866
Russian Federation	2	48	-2.6	26.5	1674
Slovak Republic	1523	1791	6.0	23.8	56
Slovenia	1125	1702	3.6	23.7	279
Ukraine	52	99	-4.4	24.5	1054
Uzbekistan	14	33	2.0	23.4	4171

Source: EBRD Transition Report 2003; World Development Indicators 2003, The World Bank; U.S. Bureau of the Census.

Table 5.9: Main Contract Enforcement Indices by Country

Country	LAW_DISSEM	REG_COURTS	CONFID_COURTS
Albania	58.59	81.25	37.50
Armenia	54.69	62.50	18.75
Azerbaijan	54.17	66.67	58.33
Belarus	81.25	62.50	62.50
Bulgaria	81.05	90.23	58.59
Croatia	66.84	95.14	62.50
Czech Republic	82.81	85.34	60.71
Estonia	84.75	89.29	78.57
FYR Macedonia	80.21	100.00	54.17
Georgia	65.63	93.75	62.50
Hungary	77.24	85.98	77.88
Kazakhstan	65.63	73.75	55.00
Kyrgyzstan	47.92	81.25	62.50
Latvia	73.18	64.06	40.63
Lithuania	71.88	84.38	54.17
Moldova	66.67	91.67	58.33
Poland	84.30	86.46	50.00
Romania	78.65	87.50	72.92
Russian Federation	76.49	75.89	55.95
Slovak Republic	78.13	91.25	61.67
Slovenia	81.25	91.67	83.33
Ukraine	67.97	77.08	59.38
Uzbekistan	45.57	68.75	40.63

Source: EBRD Legal Indicator Survey, 1999, and author's compilations.

Table 5.10: Main Contract Enforcement Indices by Country

Country	COURT_PERF	DURATION	CORR_CRIME
Albania	47.92	68.75	16.67
Armenia	100.00	81.25	75.00
Azerbaijan	70.83	79.17	20.83
Belarus	58.33	37.50	14.58
Bulgaria	46.67	59.38	36.63
Croatia	41.09	50.00	34.90
Czech Republic	50.00	51.79	34.38
Estonia	53.77	75.00	40.48
FYR Macedonia	52.78	62.50	31.25
Georgia	66.67	50.00	37.50
Hungary	52.78	52.88	39.61
Kazakhstan	55.00	90.00	9.38
Kyrgyzstan	62.50	83.33	18.75
Latvia	41.67	84.38	32.29
Lithuania	58.33	70.83	54.17
Moldova	61.11	87.50	13.89
Poland	41.67	53.57	36.21
Romania	56.94	52.08	32.92
Russian Federation	55.83	85.12	26.28
Slovak Republic	54.38	51.25	36.04
Slovenia	41.67	45.83	37.50
Ukraine	56.25	81.25	13.80
Uzbekistan	52.08	71.88	38.54

Source: EBRD Legal Indicator Survey, 1999, and author's compilations.

Table 5.11: Mapping of LIS Questions Into Contract Enforcement Variables

Variable	LIS Question
LAW_DISSEM	(Q1+Q2+Q3+Q4+Q5+Q6+Q7+Q8)/8*100
LAW_DRAFT	Q1*100
LAW_PUBL	Q2*100
PRIV_PUBL	Q3*100
TIMELY_PUBL	Q4*100
COURT_DEC_PUBL	Q7*100
REG_COURTS	(Q10+Q11+Q12+Q15)/4*100
JUD_REVIEW	Q12*100
APPEAL	Q11*100
WRITTEN_JUDG	Q10*100
CONFID_COURTS	(Q13+Q14)/2*100
CONFID_STATE	Q14*100
CONFID_PRIVATE	Q13*100
COURT_PERF	(Q17+Q18+Q19)/3*100
SHORT_PROC	Q19*100
DURATION	(Q16+Q20)/2*100
DUR_TRIAL	Q16*100
DUR_EXEC	Q20*100
CORR_CRIME	(Q21+Q22+Q23+Q24)/4*100

Source: Legal Indicator Survey 1999, and author's compilations.

Table 5.12: Individual Question Scores on Contract Enforcement: Questions 1-12

Country	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q9a	Q10	Q11	Q12
Albania	0.50	0.69	0.88	0.88	0.81	0.38	0.31	0.25	1.00	0.17	1.00	0.81	0.81
Armenia	0.75	0.75	1.00	1.00	0.63	0.25	0.00	0.00	0.88	0.67	0.63	0.63	0.50
Azerbaijan	0.67	0.92	1.00	0.67	0.25	0.25	0.17	0.42	1.00	0.28	0.83	0.83	0.83
Belarus	0.50	1.00	1.00	1.00	1.00	0.25	0.75	1.00	1.00	0.17	1.00	0.50	0.50
Bulgaria	0.88	0.88	0.98	0.97	0.67	0.47	0.81	0.83	0.91	0.28	1.00	0.92	0.89
Croatia	0.67	0.89	0.89	0.78	0.58	0.36	0.56	0.63	0.75	0.24	0.97	0.97	0.89
Czech Republic	0.82	0.98	0.96	0.93	0.70	0.61	0.80	0.82	1.00	0.38	0.96	1.00	0.93
Estonia	0.86	1.00	1.00	0.93	0.68	0.54	0.82	0.96	0.79	0.33	0.89	0.93	0.96
FYR Macedonia	0.92	1.00	0.83	1.00	0.58	0.75	0.75	0.58	0.92	0.39	1.00	1.00	1.00
Georgia	1.00	1.00	1.00	1.00	1.00	0.25	0.00	0.00	1.00	0.50	1.00	1.00	1.00
Hungary	0.83	0.83	1.00	0.81	0.73	0.54	0.71	0.73	0.87	0.30	0.90	0.92	0.90
Kazakhstan	0.75	0.80	1.00	0.90	0.60	0.50	0.30	0.40	1.00	0.17	0.95	0.95	0.70
Kyrgyzstan	0.67	0.67	0.67	0.67	0.42	0.25	0.25	0.25	0.83	0.22	1.00	1.00	0.75
Latvia	0.63	0.92	1.00	0.88	0.56	0.63	0.56	0.69	0.81	0.38	0.81	0.75	0.67
Lithuania	0.50	0.92	0.92	0.83	0.67	0.58	0.67	0.67	1.00	0.45	1.00	1.00	1.00
Moldova	0.83	1.00	1.00	0.67	0.42	0.42	0.42	0.58	0.92	0.39	0.83	1.00	1.00
Poland	0.86	1.00	1.00	0.83	0.89	0.43	0.86	0.88	0.93	0.29	0.82	0.93	1.00
Romania	0.63	0.88	1.00	0.83	0.75	0.42	0.92	0.88	1.00	0.31	0.79	1.00	0.88
Russian Federation	0.67	0.89	0.95	0.93	0.69	0.49	0.71	0.79	0.99	0.33	0.94	0.81	0.64
Slovak Republic	0.90	1.00	0.98	0.90	0.38	0.38	0.90	0.83	0.95	0.22	0.95	0.95	0.93
Slovenia	0.75	0.92	0.92	1.00	0.75	0.58	0.75	0.83	1.00	0.17	1.00	0.92	1.00
Ukraine	0.63	0.88	1.00	1.00	0.63	0.34	0.41	0.56	0.91	0.08	0.81	0.75	0.81
Uzbekistan	0.50	0.56	0.94	0.63	0.25	0.25	0.19	0.33	0.94	0.46	0.88	0.88	0.56

Source: EBRD Legal Indicator Survey, 1999.

Table 5.13: Individual Question Scores on Contract Enforcement: Questions 13-24

Country	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24
Albania	0.42	0.33	0.63	0.88	0.44	0.67	0.33	0.50	0.25	0.42	0.00	0.00
Armenia	0.25	0.13	0.75	0.88	1.00	1.00	1.00	0.75	0.50	1.00	1.00	0.50
Azerbaijan	0.75	0.42	0.17	1.00	0.75	0.75	0.63	0.58	0.17	0.67	0.00	0.00
Belarus	1.00	0.25	0.50	0.75	0.75	0.75	0.25	..	0.75	-0.17	0.00	0.00
Bulgaria	0.61	0.56	0.80	0.72	0.67	0.53	0.20	0.47	0.39	0.76	0.31	0.00
Croatia	0.69	0.56	0.97	0.61	0.53	0.56	0.14	0.39	0.31	0.83	0.13	0.13
Czech Republic	0.64	0.57	0.52	0.64	0.70	0.70	0.11	0.39	0.38	1.00	0.00	0.00
Estonia	0.79	0.79	0.79	0.89	0.57	0.54	0.50	0.61	0.50	0.83	0.14	0.14
FYR Macedonia	0.58	0.50	1.00	0.92	0.75	0.58	0.25	0.33	0.58	0.67	0.00	0.00
Georgia	0.75	0.50	0.75	0.50	0.75	1.00	0.25	0.50	0.50	0.00	1.00	0.00
Hungary	0.81	0.75	0.71	0.75	0.60	0.73	0.25	0.31	0.50	0.90	0.00	0.18
Kazakhstan	0.65	0.45	0.35	1.00	0.60	0.55	0.50	0.80	0.50	-0.13	0.00	0.00
Kyrgyzstan	0.83	0.42	0.50	0.92	0.88	0.75	0.25	0.75	0.33	0.42	0.00	0.00
Latvia	0.44	0.38	0.33	0.88	0.50	0.42	0.33	0.81	0.38	0.67	0.25	0.00
Lithuania	0.58	0.50	0.38	0.75	0.58	0.75	0.42	0.67	0.50	1.00	0.33	0.33
Moldova	0.67	0.50	0.83	0.92	0.58	0.75	0.50	0.83	0.33	0.22	0.00	0.00
Poland	0.54	0.46	0.71	0.57	0.75	0.46	0.04	0.50	0.50	0.81	0.14	0.00
Romania	0.75	0.71	0.83	0.67	0.75	0.58	0.38	0.38	0.42	0.57	0.17	0.17
Russian Federation	0.60	0.52	0.64	0.94	0.56	0.70	0.41	0.76	0.31	0.64	0.10	0.00
Slovak Republic	0.65	0.58	0.83	0.65	0.69	0.72	0.23	0.38	0.48	0.77	0.10	0.10
Slovenia	0.83	0.83	0.75	0.42	0.58	0.67	0.00	0.50	0.50	1.00	0.00	0.00
Ukraine	0.66	0.53	0.71	0.91	0.84	0.47	0.38	0.72	0.47	0.08	0.00	0.00
Uzbekistan	0.50	0.31	0.44	0.88	0.75	0.38	0.44	0.56	0.50	0.71	0.33	0.00

Source: EBRD Legal Indicator Survey, 1999. Note: ".." means no answer was provided.

Appendix 5.B Contract Enforcement Questionnaire

Q1. Do legally trained personnel generally draft commercial laws?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q2. Are the full texts of laws affecting investment published and distributed throughout the country?

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Never Rarely Sometimes Frequently Almost Always

Q3. If so, are they published:

a) by the private sector only?

b) by the public sector (government) only?

c) by both the public and private sector?

Option a) gets 0.5, option b) gets 0.75 and option c) gets 1 point. The maximum score is 1.

Q4. Typically, how often are laws affecting investment published?

a) Within 1 month of being passed?

b) Between 1 and 6 months of being passed?

c) More than 6 months of being passed?

Option a) gets 1 point, option b) gets 0.5 and option c) gets zero. The maximum score is 1.

Q5. Are draft laws affecting investment published and accessible to practitioners?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q6. If yes, is there an opportunity for parties to comment on draft laws?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q7. Are important court decisions usually published and accessible to practitioners?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q8. If yes, are they usually published within 12 months of being issued?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q9. Are judges sitting on commercial or arbitration courts graduates in law?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q9a. How does the annual average salary of a judge of a court of first instance compare with that of i) a private lawyer, and ii) an entry level primary school teacher? Using an index of 100 for such a judge, please complete

Judge of court of first instance 100

Private Lawyer

Entry level primary school teacher

Not scored in previous rounds of the data. Scoring here included attaching equal weight of 0.50 for the judge having a salary (in % of that of a private lawyer) of above the median in the sample, and for having a salary (in % of that of a primary teacher) above the median in the sample.

Q10. Do judgements usually provide written reasons for the decision?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q11. Is there usually a meaningful right of appeal from first instance court decisions?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q12. Is there an independent right of judicial review of administrative action?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q13. Do private parties generally believe that courts would recognise and enforce their legal rights against another private party?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q14. Do private parties generally believe that courts would recognise and enforce their legal rights against state parties?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75

and Almost Always gets 1.

Q15. Are foreign judgements (including arbitral awards) recognised, enforced and ultimately decided by the courts without a re-examination of the merits?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q16. How long on average can a party be expected to wait to have a commercial case heard on the merits by a court in the most important commercial centre?

a) less than 6 months

b) between 7 months - 1 year

c) between 1 - 2 years

d) between 2 - 3 years

e) more than 3 years

Option a) gets 1 point, option b) gets 0.75, c) gets 0.5, d) gets 0.25 and e) gets zero. The maximum score is 1.

Q17. Does the involvement of the court affect enforcement because the courts tend to protect the debtor?

Never Rarely Sometimes Frequently Almost Always

Never gets 1 point, Rarely gets 0.75, Sometimes gets 0.5, Frequently gets 0.25 and Almost Always gets 0.

Q18. Does the involvement of the court affect enforcement because the fees are too high?

Never Rarely Sometimes Frequently Almost Always

Never gets 1 point, Rarely gets 0.75, Sometimes gets 0.5, Frequently gets 0.25 and Almost Always gets 0.

Q19. Does the involvement of the court affect enforcement because the proceedings take too long?

Never Rarely Sometimes Frequently Almost Always

Never gets 1 point, Rarely gets 0.75, Sometimes gets 0.5, Frequently gets 0.25 and Almost Always gets 0.

Q20. How long on average can a party be expected to wait to have a final judgement for payment of a sum of money executed (through, for example, seizure and sale of property)?

a) Less than 6 months

b) 7 months - 1 year

c) 1 - 2 years

d) 2 - 3 years

e) More than 3 years

Option a) gets 1 point, option b) gets 0.75, c) gets 0.5, d) gets 0.25 and e) gets zero. The maximum score is 1.

Q21. Are cases involving corrupt practices, including bribery of public officials, investigated and prosecuted?

Never Rarely Sometimes Frequently Almost Always

Never gets 0 points, Rarely gets 0.25, Sometimes gets 0.5, Frequently gets 0.75 and Almost Always gets 1.

Q22. Do laws exist prohibiting insider share dealing of publicly listed companies? Y___ N ___U___

A 'Yes' answer gives 1, a 'No' answer is worth 0, 'Unclear' is penalised at -1/6.

Q23. Is the level of crime relating to business in the most important commercial centre generally:

a) Declining?

b) Static?

c) Increasing?

Option a) gets 1 point, option b) and c) get zero. The maximum score is 1.

Q24. Is the level of government corruption:

a) Declining?

b) Static?

c) Increasing?

Option a) gets 1 point, option b) and c) get zero. The maximum score is 1.

Table 5.14: A Comparison of Legal Indicator Survey Questions on Contract Enforcement and Djankov et al. (2003a) Indices

LIS Qn No.	Belongs to	Question on	Relevance to	Djankov et al. (2003a) variable
Q1	Law drafting and dissemination	Frequency with which legally trained personnel draft commercial laws	effectiveness	Does not cover
Q2	Law drafting and dissemination	Frequency with which full texts of investment laws are published and distributed throughout the country	effectiveness	Does not cover
Q3	Law drafting and dissemination	Commercial laws published both by the public and private sectors	effectiveness	Does not cover
Q4	Law drafting and dissemination	Timeliness of publication of new commercial and investment laws	effectiveness	Does not cover
Q5	Law drafting and dissemination	Frequency with which investment laws are published and accessible to practitioners	effectiveness	Does not cover
Q6	Law drafting and dissemination	Frequency with which parties comment on draft commercial laws	effectiveness	Does not cover

Q7	Law drafting and dissemination	Frequency with which important court decisions are published and accessible to legal practitioners	effectiveness	Does not cover
Q8	Law drafting and dissemination	Important court decisions are published within 12 months of their issuance	effectiveness	Does not cover
Q9	Judges' Qualifications	Frequency with which commercial court judges have legal education	effectiveness	Professional Versus Nonprofessional judge sub-index
Q9a	Judges' Qualifications	Judges' salaries are high relative to those of private lawyers and other public servants	effectiveness	Does not cover
Q10	Procedural Regulations of the Courts	Frequency with which court judgments provide written reasons for the decision	effectiveness	Written Versus Oral sub-index; Judgment Must Be Legally Justified sub-index
Q11	Procedural Regulations of the Courts	Frequency with which a meaningful right of appeal of first-instance court decisions exists	effectiveness	Control of Superior Review sub-index

Q12	Procedural Regulations of the Courts	Frequency with which an independent right of judicial review of administrative actions exists	effectiveness	close to Control of Superior Review sub-index
Q13	Confidence in the Courts	Frequency with which private parties generally believe that the courts would recognise and enforce their legal rights against other private parties	effectiveness	Confidence in Legal System variable (WBES)
Q14	Confidence in the Courts	Frequency with which private parties generally believe that the courts would recognise and enforce their legal rights against the state	effectiveness	Confidence in Legal System variable (WBES)
Q15	Procedural Regulations of the Courts	Frequency with which foreign judgments are recognised, enforced and decided by the courts without a re-examination of the merits	effectiveness	Does not cover
Q16	Duration of Trial	Average duration of a commercial court case in a court of first instance	effectiveness	Duration until completion of service of process and Duration of trial variables

Q17	Perceptions of Court Performance	Enforcement is not affected due to courts protecting debtors	effectiveness	Legal system is fair and impartial variable (WBES)
Q18	Perceptions of Court Performance	Enforcement is not affected due to high fees	effectiveness	Costs of court enforcement (attorney and court fees) variables (World Bank (2004a); Legal system is affordable variable (WBES)
Q19	Perceptions of Court Performance	Enforcement is not affected due to long court proceedings	effectiveness	Total Duration in Practice variable
Q20	Duration of Execution	Duration of execution of a first-instance judgment for the payment of a sum of money	effectiveness	Duration of Enforcement variable
Q21	Corruption and Crime	Frequency with which corrupt practices, such as bribery of public officials, are investigated and prosecuted	effectiveness	close to Legal system is fair honest and uncorrupt variable (WBES)

Q22	Corruption and Crime	Insider dealing is prohibited by law	extensiveness	Does not cover
Q23	Corruption and Crime	Level of crime in the most important commercial centre is declining	effectiveness	Does not cover
Q24	Corruption and Crime	Level of government corruption in the most important commercial centre is declining	effectiveness	Does not cover

Chapter 6

Concluding Remarks

6.1 Summary of Main Research Questions and Methodology

The purpose of this dissertation was to examine the impact of legal and institutional factors upon financial development in transition economies. As a separate, but related, theme, it also aimed to analyse the impact of legal and institutional factors upon flows of foreign direct investment (FDI) into transition economies. The main questions we sought to answer were as follows: "Do securities laws and regulations affect stock market development in transition economies?", "Which elements of securities laws and regulations matter most for stock market development and performance?", "Is there any difference between the extent of the law – albeit perceived rather than actual – and the enforcement of the law – again as perceived by lawyers?" These questions were taken up in Chapters 2 and 3. Further questions included the following: "Does banking law and the regulation and supervision of banks affect bank performance and lending?", "Which elements of banking law and regulation are essential for a more liquid and deeper credit market?", "Is there any difference between bank supervisory powers – as recorded in the law – and their

enforcement in practice in their effect on credit market performance?" The analysis of these questions took place in Chapter 4. A final set of questions was related to the effects of the institutional and legal environment on FDI inflows. These included: Does the contract enforcement environment and the work of the courts attract or repel foreign investors? Which elements of the process of adopting economic and investment-related laws relate to a decision to produce in a host transition economy, from the vantage point of a foreign firm? Do perceptions of how courts work matter? What elements of the regulation of court process are perceived as enhancing the property rights of foreign investors? To the extent that FDI has been a major source of finance for enterprises in transition countries, this sub-theme relates well to the analysis of stock market and bank performance in prior chapters.

The research undertaken to do so relied on a survey of legal practitioners based in 23 Central and Eastern European transition economies, including the countries of the CIS. The survey was implemented in the summer of 1999 as a tool to gather information on legal developments and legal reform in the area of economic law. As explained in Chapter 2, the 1999 Legal Indicator Survey (LIS) was run for the first time in the summer of 1999 by the Office of the General Counsel of the EBRD as a comprehensive questionnaire, combining the previously separate sections on commercial law – including pledge, bankruptcy, company law and general commercial law effectiveness (what we call contract enforcement), and on financial law – including securities market laws and banking laws. In this dissertation, we have utilised the financial part of the questionnaire – i.e. the securities and banking laws sections, as well as the general commercial law effectiveness section, even though we have subjected the other three sections to the same comprehensive and systematic cleaning procedure as performed on the data used in the analysis in earlier chapters.

We must stress some of the caveats associated with the use of survey data to proxy for the quality and enforcement of complex financial and commercial laws.

First, lawyers' opinions and perceptions may differ from the actual text or position in the law. Therefore, our extent of law measures may not quite reflect the true position of the law. There is not much that can be done to correct for this – unless we compare all the answers for a given jurisdiction to a particular survey question with the actual text of the law, which applies to that question. Despite this, opinions diverging from the law may actually be telling us more about the law and its functioning than a simple read of the legal text. Thus, the Czech Republic does not have a collateral law, which allows for non-possessory pledges in movable property. However, the surveyed Czech lawyers have told us of ways that this may be circumvented and therefore the law text only would have been a poor guide. Second, lawyers may not know the exact provision of the law, or may not want to give a correct answer – something which we worry about less, given the profile of respondents from the largest and internationally active law firms in these countries. Third, the law itself may be unclear or new, so that it has not been used and the lawyers do not know much about its use. The questionnaire allows respondents to choose an answer option "Unclear", which exists in the menus of most LIS questions. Next, the questionnaire itself may not be well-designed. Survey design – for self-administered written questionnaires, such as the LIS – covers many issues, such as how to ask questions, what type of questions to ask and what answer options to give; how to order questions; what answer scales to use, etc. In particular, as discussed at some length in Chapter 2, for perception-based qualitative questions survey designers should introduce appropriate answer ranges, which allow quantifying the responses. Finally, once survey responses are gathered, the decision of how to process these data and what weighting procedure to adopt in aggregating the data is crucial.

As outlined in Chapter 2, we have adopted several strategies to ensure that the legal survey data we work with is of a good quality. First, the respondents had been carefully chosen from prior runs of the survey, and were well-established law

firm based in the transition countries – mostly local, but also some local offices of international law firms. The lawyers completing the questionnaire were asked to give their names and also to provide comments and the texts of the law in certain cases. Furthermore, unlike many other surveys of lawyers or other experts, which ask just one law firm per country to glean information about its laws, the LIS data rely on several law firms' independent answers to the questionnaire for the same jurisdiction. Of course, conflicting views and disagreement in answers from two law firms on one issue are possible, but the strategy of the EBRD had been to incorporate all answers in the scoring, regardless of contradictions, and without subjecting the answers – those related to the content of the law – to an objective test with the actual law, and we have retained this strategy. An alternative way to deal with contradictory answers from different law firms in the same country is to adopt a "majority" rule, suitably defined, and to treat the answer with the most hits as the correct one. As shown in Chapter 2, adopting such a rule does not change our results.

For the purposes of employing the 1999 LIS data in this dissertation, the data were subjected to cleaning procedures, aimed at identifying coding errors, internal answer inconsistencies, and data entry errors. Furthermore, the weights assigned to questions with the purpose of aggregating the data in legal indices, have been reviewed and some of the internal weights altered to correspond better to economic theories being tested with the data; overall question weights have also been changed from prior uses of the data – with all questions scoring equally. These modifications in the weights, together with the cleaning and eliminations of errors, have led to legal indices which are not equal to ones previously published. It is my belief that these steps have substantially increased the quality of the data.

To the degree that I had available the raw data from the 1999 LIS and wanted to utilise it directly rather than rely on the generic legal indices published by the EBRD (1 to 4* scale), this dissertation has also involved an effort in understanding

and applying survey questionnaires and methodologies, as Chapter 2 attests.

6.2 Overall conclusions

1. We have established that – subject to some caveats – better legal extensiveness and enforcement of securities laws tend to have a positive impact on stock market development; among securities laws legal factors, the enforcement of securities laws with respect to disclosure of information by issuers of securities, and regulation of securities market intermediaries appear to be particularly strong in explaining the variation in market capitalisation and turnover. Enforcement powers of the Securities Regulator display a tendency to raise the turnover ratio, but not capitalisation.

2. In the set of basic stock market capitalisation regressions I controlled for method of privatization, economic development and macroeconomic stability. Controlling for these variables generally leaves our main results unchanged. Controlling for GDP per capita alongside the legal variables or in a two-step procedure generally leaves the enforcement indices significant, but not the extent-of-law ones.

3. The regression analysis also proposed and used a set of instrumental variables to account for estimation problems related to endogenous dependent and legal variables, omitted variables and country-specific effects. These sets of instrumental variables are country legal origin; legal transplant status; realizations of the Pistor et al. (2000) index of stock market integrity for years prior to 1999; years spent under communism; and religion practised by the majority of the population. The series of IV regressions – often conducted as robustness tests – generally support the findings of the OLS regressions: i.e. all three securities indices per theme (disclosure, intermediary regulation, enforcement

powers and aggregate indices) tend to have a significant positive impact on stock market outcomes. Several different IV sets are tested – and some of the IV regressions suffer from weak instruments, so the diagnostic tests at the second stage are not particularly useful. The IV regression results of the market capitalisation and market turnover regressions differ in some instances.

4. Chapter 3 looked at disaggregated indices of securities law and regulation, and established that the availability of information about securities issuers, and the strict enforcement of rules on disclosure display a tendency to raise market capitalisation and turnover. Alleviating information asymmetries is thus beneficial for securities market development.

5. We find evidence of positive effects for stock market development of effective legal norms on the conduct and disclosure rules for securities market intermediaries – such as brokers, dealers, investment bankers, investment funds, pension funds, and others. Market intermediaries provide market liquidity, but also vouch for the truthfulness of disclosed issuers' information, and thus help resolve problems of asymmetric information in the securities market.

6. These results – covering a small sample of transition economies, which embarked upon a course of legal and financial reform in the early 1990s – are in line with other related research, which covers other countries and periods, e.g. La Porta et al. (2003). They found that mechanisms for private enforcement of securities laws rather than through powerful public enforcement, enhance securities market development.

7. Nevertheless, given the small sample size, the difficulties of measuring stock market development in transition economies and in disentangling the effects of legal development from economic development, our results should be interpreted with caution. Some of the estimation techniques employed – such as

the IV regressions – also indicate potential problems in instrumenting for legal extensiveness and enforcement, thereby adding another caveat to the results.

8. Chapter 4 studied the impact of disaggregated indices of Banking Law and Regulation on the availability of private credit, the penetration of foreign banks and the liquidity of the domestic financial system. It found evidence that private credit expansion tends to be associated with better information disclosure by banks, and better accounting standards. Specifically, the results appear to indicate that effective external auditing of banks as well as consolidated supervisory examinations of banks tend to generate benefits, most likely due to better private monitoring of banks, and these benefits are found to result in more credit to the private sector, higher liquidity and more foreign banks.

9. Our results also revealed that bank accounting rules and practices tend to contribute toward more effective private enforcement, and to be associated with more developed and liquid banking markets. It is essential to note that despite some ambiguities in the answers to some of the accounting-related questions, we do find that legal provisions on who writes the accounting rules – the government or the professional accounting community – tend to affect our financial market outcomes in a manner such that less reliance on the government appears to be associated with a better banking development.

10. We find substantial evidence that banking law provisions on foreign ownership and licensing tend to have a significant impact upon the volume of private credit, and upon foreign bank entry. Fewer restrictions on foreign ownership of domestic banks appear to facilitate foreign entry and are significantly associated with more private credit in the economy.

11. In contrast to Barth et al. (2004), we find that capital adequacy rules – measured by adherence to the Basle Capital requirements – display a tendency to

raise the volume of private credit, most likely through reducing bank managers' risk-taking incentives and promoting banking stability.

12. Importantly, our results differ from the results of Barth et al. (2004) about banking supervisory powers reducing the volume of credit and being associated with worse financial market outcomes. Both banking supervisors' authority to conduct on-site examinations and the availability of professional examiners to conduct these are found to be related positively to private credit, albeit the results are not always significant. In contrast, we do find a tendency that more frequent examinations of banks result in less private credit, but more tests are needed here to determine whether these regressions suffer from selection bias (i.e. examinations being associated with more troubled banks).

13. All the Banking Law regressions control for past inflation, the share of state banks in 1998 as a proxy for soft budget constraints and the degree of competition in the banking industry, and for availability of borrower information as proxied by the index of Public Credit Registry, World Bank Doing Business database, World Bank (2004a). The control variables enter with the expected signs, and are generally significant at the standard levels. The Banking Law variables, which are found significant, are robust to the inclusion of these control variables.

14. Robustness checks are carried out employing alternative dependent variables, such as the share of liquid liabilities of banks and non-bank financial intermediaries in GDP, and the share of commercial bank assets in the total of central bank and commercial bank assets. Our main results continue to hold. Furthermore, our main results for the effects of information disclosure by banks and legal restrictions on foreign bank ownership are also robust to controlling for GDP per capita.

15. Further robustness checks are done, using instrumental variables estimations, employing the countries' legal origin as an instrument for the banking law measures. Alternative instruments included main religion, number of years spent under communism and legal transplant status. The IV regressions support the main findings of the OLS estimations subject to some caveats related to the appropriateness of the instruments.

16. An important caveat associated with the comparison of our results on Banking Law with the results of Barth et al. (2004) is the fact that their and our variables, which supposedly measure the same legal or regulatory concept, are not well correlated in some instances. The correlation is either too low, or even negative. However, in the main results regarding the impact of Disclosure Requirements and Private Monitoring, Supervisory Powers and Foreign Entry Restrictions, the key variables are well correlated and comparisons of their and our results are therefore possible.

17. Chapter 5 examined the impact of the contract enforceability regime and the work of the courts on the flows of FDI per capita in the transition economies over the period 1999-2002. It found substantial evidence that a better contract enforcement regime – as perceived by the respondents to the 1999 LIS – has a positive impact on FDI inflows. As in previous chapters, a disaggregated approach was adopted to assess different aspects of the contract enforcement regime such as the drafting and dissemination of new laws related to the economy and investment; litigants' rights of appeal and administrative review of government decisions; confidence in the courts; court performance; and the general perceptions of crime and corruption in the country.

18. The results suggest that FDI flows seem to benefit from a more open and transparent process of drafting, adopting and disseminating new laws on in-

vestment and commercial activity. In addition, well-respected rights of appeal before a higher-level court also tend to increase FDI flows significantly.

19. Foreign investors tend to be attracted to locations with a guaranteed judicial review of government decisions, and where the courts are believed to respect private parties' contractual and property rights in disputes with the state, but not in disputes with other private parties. This suggests that in this way foreign investors probably reduce their risks of expropriation from the host-country government.[1]

20. The results on duration of a standard court trial in the country's largest commercial centre, as well as perceptions of speediness of court procedures are found to affect FDI inflows significantly, but negatively. The duration of trial and enforcement of judgment estimates, based on the LIS respondents' answers are compared with estimates of duration of contract enforcement in a first-instance debt collection case based on World Bank data for 2003 (Doing Business database). We find a high and significant positive correlation between the LIS and the World Bank Doing Business data – the Central European countries, which are leaders in attracting FDI – tend to have the longest durations of court enforcement, and the worst perceptions regarding speediness of court procedure. We conjecture that these results may be due to institutional structure – in the sense that many CIS countries have commercial courts, which may allow for faster disposition of commercial cases; the differential in duration between Central Europe and the CIS may also be due to a heavier use of the courts in Central European countries. More research on this is needed.

21. The FDI regressions also control for macroeconomic fundamentals, such as past

[1]This finding is also in line with recent empirical evidence, i.e. Acemoglu and Johnson (2003), about the higher explanatory power of property rights institutions over contracting institutions in explaining growth, investment and financial development across a sample of former colonies.

inflation and growth, as well as distance to Western Europe. Economy size is also controlled for, but found insignificant. Controlling for GDP per capita as a proxy for economic development, however, affects most of our results – the institutional variables lose significance once GDP per capita's effect on FDI inflows has been accounted for. Therefore, we interpret our main results as merely suggestive.

22. The contribution of all the main thematic chapters of the thesis is to assess empirically various existing theories and empirical evidence about the impact of laws and institutions on domestic capital markets, banks and flows of foreign investment. The novelty is in using legal survey perception-based data, which provides a detailed and rich set of variables, which proxy for different aspects of the legal environment. Despite the fairly small sample size of about 20 or so observations, and using simple cross-section estimation techniques, the chapters expand on existing knowledge about securities and banking development in transition, by going in some further detail compared to existing approaches, i.e. La Porta et al. (2003), Barth et al. (2004), and by expanding some of the existing studies' samples to the transition economies in the late 1990s.

6.3 Policy Implications

The results of this dissertation indicate that, generally – and subject to some caveats linked to the survey legal data, the small sample size and the robustness of the main regression results – better securities and banking laws and regulations tend to improve financial market performance, measured by stock market capitalisation and turnover, and to raise the share of private credit and liquid liabilities of the banking system in GDP. Through improving the performance of the financial system, legal

and institutional development can mobilise more financial resources and allocate them towards their most efficient use, thereby increasing economic growth.

The transition economies have already undertaken significant reforms of their legal and institutional systems, and these reforms are continuing. The analysis of the survey data utilised in the thesis has revealed that although the laws have been revised substantially and new legislation adopted in all the major areas of financial and commercial activity, there is still scope for improvement. The main policy recommendations which follow from the analysis in this dissertation include:

1. Benefits could be derived – given the evidence of Chapter 3 – from strengthening securities market regulation, and in particular, enforcement of information disclosure by issuers.

2. Similarly – given the results of Chapter 3 – strengthening the regulation of securities market intermediaries such as investment brokers, investment funds, pension funds, and others, can enhance stock market development.

3. Improving the capabilities, resources and independence of the Securities Regulator, as well as its powers of corrective action in cases of insider dealing and other securities law violations can also be beneficial for market capitalisation and turnover.

4. Based on the analysis of Chapter 4 – including some reservations about the methodology and estimations – strengthening banking regulation, and specifically improving the disclosure of financial information by banks, and implementing rules on consolidated accounting and examination of banks, can yield benefits.

5. Relaxing bank ownership restrictions for foreign banks can improve competition and help restructure domestic banks.

6. Implementing effectively banking laws on anti-money laundering, and endowing bank supervisors with sufficient powers to ensure compliance with anti-money-laundering legislation can be beneficial for banking markets.

7. Despite that our evidence on banking supervisory powers is somewhat inconclusive, it may still be useful to build the institutional capacity for effective bank regulation and supervision. Furthermore – based on our results – efforts should be expended to insulate banking supervision and regulation from political pressures, through budgetary independence and the term of tenure of the head of Bank Supervisory Authority.

8. Compliance with the Basle Capital Adequacy requirements and their effective enforcement should be encouraged.

9. All the Banking Law and Regulation results are also subject to limitations and caveats. Therefore, policy implications related to banking regulation should necessarily be taken with caution.

10. Policymakers should consider ways to improve the climate for foreign investment, not only through appropriate foreign investment laws, but also through improving the general environment for contractual compliance and enforcement.

11. Based on the results of Chapter 5, legislative drafting should be transparent and open; new business-related laws should be published and disseminated in a timely manner.

12. Similarly – based on the results of Chapter 5 – court procedures should guarantee litigants' rights of appeal against both the state and other parties.

13. Court performance – measured by the duration of a standard case of debt

collection, the impartiality, competence and fairness of the judge, and the cost of contract enforcement in court – requires improvement.

14. Court delays appear – as given by the LIS results and alternative sources – particularly problematic for Central and Eastern Europe, but not the CIS countries. In this regard, instituting commercial procedures in the regular courts, or adopting simplified procedures for straightforward cases may be the way to go, as also suggested by other studies, e.g. Djankov et al. (2003a), World Bank (2004a), and Broadman et al. (2004). Out-of-court mechanisms, such as mediation and arbitration, can also bring benefits in terms of reducing court case backlogs.

15. As in the case of Chapters 3 and 4 earlier, the results of Chapter 5 are also subject to some qualifications. For example, controlling for GDP per capita leaves most contract enforcement variables insignificant.

16. Institutional reforms may be expensive and take a long time to materialise. In this respect, governments may be willing to undertake such reforms, only if given appropriate incentives, such as within the E.U. integration process.

17. Notwithstanding the above, the estimations are subject to certain caveats, and all recommendations are not prescriptive but rather suggestive.

In summary, this thesis has gone into detail in analysing some of the features of the securities and banking laws and the environment for enforcement of commercial contracts and protecting property rights in transition economies. Lawyers' perceptions in these areas have given us proxies for the status of legal development and symptoms as to what the main problems are. Given the scarcity of external finance to firms, the evidence presented in Chapters 3, 4 and 5 leads us to conclude that these countries could gain benefits from pursuing policies which both strengthen

their financial regulatory environment, and improve the domestic institutional environment for contract enforcement and property rights protection. Arguably, this can help domestic firm-borrowers raise finance for investment, and also attract foreign investors in.

6.4 Directions for Future Research

The research undertaken in this thesis contributes to a growing body of both theoretical, e.g. Acemoglu et al. (2003), Djankov et al. (2003b), and empirical work, e.g. La Porta et al. (2003), Djankov et al. (2003a), Acemoglu et al. (2001, 2002, 2003) on the role of laws and institutions in comparative development. It has been summed up by a new term – "The New Comparative Economics". A subset of this work also relates to the use of institutional and legal proxies in other related fields, such as corporate finance, and the empirical growth literature. The field of "New Comparative Economics" is developing at a fast pace, and part of it has been devoted to generating comparable cross-country data – in most cases based on the coding of existing laws or learning about the laws in force and their implementation from practising lawyers in different countries, e.g. World Bank (2004), Pistor (2000), Pistor et al. (2003).

As explained in Chapter 2, methodological concerns remain with the approach undertaken here to study the effects of banking and securities laws on financial development in transition economies, utilising perception-based legal survey data. One area of improvement for future researchers in this field, particularly with respect to cross-country differences in legal and institutional developments in transition, is to attempt gathering further data on the performance of the courts, and the legal system. If a survey approach is undertaken to examine the institutional environment, researchers should preferably implement their own survey instrument, following guidelines on survey design, rigorous sample selection, and ensuring that

data are coded correctly. Furthermore, the consistency checks performed on the data from the EBRD Legal Indicator Survey suggest that data entry and survey implementation are prone to error. Data should always be reviewed and cleaned carefully for this reason.

The methodology adopted here relies on a cross-section with a limited number of observations. Future work on legal and institutional factors – both for financial development and FDI – should attempt to use time series and panel data, where possible. Those methods can shed more light on the robustness of our findings. Indeed, some of the recent literature on determinants of FDI is already testing for institutional factors, employing panel estimation techniques, e.g. Campos and Kinoshita (2003), Bevan and Estrin (2000), among others. The same applies to the literature on financial market development, e.g. Beck et al. (2000), Beck and Levine (2004).

In studies of the interactions of institutions and economic development, researchers must be aware of econometric problems associated with endogeneity, omitted variables, country-specific effects and multi-collinearity. In such cases, it is imperative to identify appropriate instruments, and employ suitable panel estimation techniques for checking the robustness of the results. In fact, a lot of the recent literature has identified and employed different instrument sets for current legal and institutional development, such as early European settler mortality in colonies as in Acemoglu et al. (2001), legal origin as in La Porta et al. (1998), legal transplant status as in Berkowitz et al. (2003), main religion as in Stulz and Williamson (2003), geographical latitude as in Beck et al. (2003a, 2003b), ethnic fractionalization as in Easterly and Levine (1997), population as in Mulligan and Shleifer (2004), etc. The search for good instruments will continue.

It is often problematic in the comparative literature to isolate the effect of specific institutions and laws due to generally high correlation of such variables among

themselves, but also with economic development as measured by GDP per capita. This will be high on the agenda of future research as economists try to "unbundle" institutions, and understand through what channels institutions affect economic outcomes. Some of this research is already taking shape: for instance, Beck et al. (2003b) examine whether legal origin influences financial market development through the legal adaptability channel or the political channel; in another paper Beck et al. (2003a) address the question of whether today's financial development of former colonies is better explained by their legal origin, or by their disease environment encountered by the first European settlers. A recent paper by Acemoglu and Johnson (2003) goes a step further by distinguishing between "property rights institutions", which protect citizens from expropriation by the government and powerful elites, and "contracting institutions", which enable private contracts between citizens. They proxy contracting institutions by the measure of legal formalism in Djankov et al. (2003a), and property rights institutions with measures of protection of citizens against government expropriation and constraints on government power. Using multiple instrumental variables techniques in a sample of former colonies, it is established that property rights institutions have a major impact upon long-run economic growth, investment and financial development, while contracting institutions appear to have an influence on the form of financial intermediation and the form of regulation, but have more limited effects on growth, investment and finance. The authors conjecture that probably individuals can structure contracts in a way to avoid the adverse effects of contracting institutions, but cannot do so against the risk of expropriation from the government.

These are exciting times for the researchers of institutional economics – both theoretical and empirical. While a lot of the groundwork has already been laid, much more work is needed to understand well how different legal and institutional factors affect economic variables.

Bibliography

[1] Acemoglu, Daron, Simon Johnson and James A. Robinson (2001), "The Colonial Origins of Comparative Development: An Empirical Investigation", *American Economic Review* 91: 1369-1401.

[2] Acemoglu, Daron, Simon Johnson and James A. Robinson (2002), "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution", *Quarterly Journal of Economics* 117(4): 1231-1294.

[3] Acemoglu, Daron and Simon Johnson (2003), "Unbundling Institutions" NBER Working Paper 9934, National Bureau of Economic Research (Cambrigde, MA).

[4] Altomonte, Carlo (2000), "Economic Determinants and Institutional Frameworks: FDI in Economies in Transition", *Transnational Corporations* 9(2): 75-106.

[5] Altomonte, Carlo and Claudia Guagliano (2003), "Comparative Study of FDI in Central and Eastern Europe and the Mediterranean", *Economic Systems* 27(2003): 223-246.

[6] Amaghlobeli, David, John Farrell and James Nielsen (2003), "The Evolution of Commercial Banking in Georgia, 1991-2001", *Post-Communist Economies*, 15(1): 47-73.

[7] Barrell, Ray and Dawn Holland (2000), "Foreign Direct Investment and Enterprise Restructuring in Central Europe", *Economics of Transition* 8(2): 477-504.

[8] Barth, James, Gerard Caprio Jr. and Ross Levine (2001), "The Regulation and Supervision of Banks around the World: A New Database", *Brookings-Wharton Papers on Financial Services*, 183-240.

[9] Barth, James R., Gerard Caprio Jr. and Ross Levine (2004), "Bank Regulation and Supervision: What Works Best?", *Journal of Financial Intermediation* 13(2): 205-248.

[10] Basle Committee on Banking Supervision (1997), *Core Principles for Effective Banking Supervision*, Bank for International Settlements, Basle, September 1997.

[11] Baum, Christopher F., Mark E. Schaffer and Steven Stillman (2003), "Instrumental Variables and GMM: Estimation and Testing", Working Paper No. 545, Boston College, Department of Economics.

[12] Beck, Thorsten and Ross Levine (2004), "Stock Markets, Banks, and Growth: Panel Evidence", *Journal of Banking and Finance* 28: 423-442.

[13] Beck, Thorsten, Asli Demirguc-Kunt and Ross Levine (2003a), "Law, Endowments and Finance", *Journal of Financial Economics*, 70: 137-181.

[14] Beck, Thorsten, Asli Demirguc-Kunt and Ross Levine (2003b), "Law and Finance: Why Does Legal Origin Matter", *Journal of Comparative Economics*, 31: 653-675.

[15] Beck, Thorsten, Asli Demirguc-Kunt and Ross Levine (2003c), "Bank Supervision and Corporate Finance", World Bank Policy Research Working Paper 3042, May 2003, (World Bank, Washington D.C.).

[16] Beck, Thorsten, Ross Levine and Norman Loayza, (2000), "Finance and the Sources of Growth", *Journal of Financial Economics* 58: 261-300.

[17] Berger, Allen N. and Gregory F. Udell (1996), "Universal Banking and the Future of Small Business Lending", in Anthony Saunders and Ingo Walter (Eds.), *Financial System Design: The Case for Universal Banking*, Burr Ridge, IL: Irwin Publishing, 559-627.

[18] Berglof, Erik and Ernst-Ludwig von Thadden, (1999), "The Changing Corporate Governance Paradigm: Implications for Transition and Developing Countries", mimeo, World Development Conference, World Bank.

[19] Berglof, Erik and Patrick Bolton (2002), "The Great Divide and Beyond: Financial Architecture in Transition", *Journal of Economic Perspectives*, 16, 1: 77-100.

[20] Berkowitz, Daniel, Katharina Pistor and Jean-Francois Richard, (2003), "Economic Development, Legality and the Transplant Effect", *European Economic Review* 47: 165-195.

[21] Bevan, Alan A. and Saul Estrin (2000), "The Determinants of Foreign Direct Investment in Transition Economies", CEPR Discussion Paper No. 2638 (London: Centre for Economic Policy Research).

[22] Bevan, Alan A., Saul Estrin and Klaus E. Meyer (2001), "Institution Building and the Integration of Eastern Europe in International Production", Policy Paper 16/01, One Europe or Several? Programme, available online at www.one-europe.ac.uk/pdf/wp16.pdf

[23] Bhattacharya, Utpal and Hazem Daouk, (2002), "The World Price of Insider Trading", *Journal of Finance*, 57, 1: 75-108.

[24] Black, Bernard S. (2001), "The Legal and Institutional Preconditions for Strong Securities Markets", *UCLA Law Review* 48: 781-855.

[25] Bonin, John P. and Istvan Abel (2000), "Retail Banking in Hungary: A Foreign Affair?", William Davidson Institute Working Paper No. 356, University of Michigan, December 2000.

[26] Bonin, John P. and Bozena Leven (2001), "Can State-Owned Banks Promote Enterprise Restructuring? Evidence from One Polish Bank's Experience", *Post-Communist Economies*, 13(4): 431-443.

[27] Bonin, John P., Iftekhar Hasan and Paul Wachtel (2003), "Privatization Matters: Bank Performance in Transition Countries", paper presented at the Conference on Bank Privatization, World Bank, Washington D.C., November 20-21, 2003.

[28] Borensztein, Eduardo, Jose De Gregorio and Jong-Wha Lee (1998), "How Does Foreign Direct Investment Affect Economic Growth?", *Journal of International Economics* 45(1): 115-135.

[29] Botero, Juan, Simeon Djankov, Rafael La Porta, Florencio Lopez de Silanes and Andrei Shleifer (2004), "The Regulation of Labor", mimeo, Harvard University, May 2004.

[30] Boyd, John H., Ross Levine and Bruce D. Smith, (2001), "The Impact of Inflation on Financial Sector Performance", *Journal of Monetary Economics* 47: 221-248.

[31] Broadman, Harry G., James Anderson, Constantijn A. Claessens, Randi Ryterman, Stefka Slavova, Maria Vagliasindi and Gallina Vincelette (2004), *Building Market Institutions in South Eastern Europe: Comparative Prospects for Investment and Private Sector Development*, World Bank, Washington D.C.

[32] Brock, Gregory, J. (1998), "Foreign Direct Investment in Russia's Regions 1993-95. Why So Little and Where Has It Gone?", *Economics of Transition*, 6(2): 349-360.

[33] Buch, Claudia M., Robert M. Kokta and Daniel Piazolo (2003), "Foreign Direct Investment in Europe: Is There Redirection from the South to the East?", *Journal of Comparative Economics* 31: 94-109.

[34] Campos, Nauro F. and Yuko Kinoshita (2003), "Why Does FDI Go Where It Goes? New Evidence from the Transition Economies", IMF Working Paper No. WP/03/228 (Washington: International Monetary Fund).

[35] Carlin, Wendy and Colin Mayer (2003), "Finance, Investment, and Growth", *Journal of Financial Economics* 69: 191-226.

[36] Claessens, Stijn and Daniela Klingebiel (2001), "Competition and Scope of Activities in Financial Services", *The World Bank Research Observer*, 16, 1: 19-40.

[37] Claessens, Stijn, Asli Demirguc-Kunt, and Harry Huizinga (2001), "How Does Foreign Entry Affect Domestic Banking Markets?", *Journal of Banking and Finance* 25: 891-911.

[38] Claessens, Stijn, Simeon Djankov and Daniela Klingebiel (2000), "Stock Markets in Transition Economies", Financial Sector Discussion Paper No. 5, The World Bank, September 2000.

[39] Clarke, George, Robert Cull, Maria Soledad Martinez Peria and Susana M. Sanchez (2001), "Foreign Bank Entry: Experience, Implications for Developing Countries, and Agenda for Further Research", World Bank Policy Research Working Paper No. 2698, (World Bank, Washington D.C.).

[40] Coase, Ronald (1960), "The Problem of Social Cost", *Journal of Law and Economics*, III: 1-44.

[41] Damijan, Joze P., Mark Knell, Boris Majcen and Matija Rojec (2003), "The Role of FDI, R&D Accumulation and Trade in Transferring Technology to Transition Countries: Evidence from Firm Panel Data for Eight Transition Countries", *Economic Systems* 27(2003): 189-204.

[42] Davidson, Russell and James G. MacKinnon (1993), *Estimation and Inference in Econometrics*, Oxford University Press.

[43] Demirguc-Kunt, Asli and Vojislav Maksimovic, (1998), "Law, Finance and Firm Growth", *Journal of Finance* 53: 2107-2139.

[44] Devereux, Michael B. and Gregor W. Smith (1994), "International Risk Sharing and Economic Growth", *International Economic Review* 35(3): 535-550.

[45] Dewatripont, Mathias and Jean Tirole (1994), *The Prudential Regulation of Banks*, MIT Press, Cambridge MA.

[46] Djankov, Simeon and Bernard Hoekman (2000), "Foreign Investment and Productivity Growth in Czech Enterprises", *World Bank Economic Review* 14(1): 49-64.

[47] Djankov, Simeon, Caralee McLiesh and Andrei Shleifer (2004), "Private Credit in 132 Countries", mimeo, World Bank and Harvard University.

[48] Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes and Andrei Shleifer (2002), "The Regulation of Entry", *Quarterly Journal of Economics* 118(2): 453-517.

[49] Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes and Andrei Shleifer (2003a), "Courts", *Quarterly Journal of Economics* 117(1): 1-37.

[50] Djankov, Simeon, Edward Glaeser, Rafael La Porta, Florencio Lopez-de-Silanes and Andrei Shleifer, (2003b), "The New Comparative Economics", *Journal of Comparative Economics*, 31, 4: 595-619.

[51] Djankov, Simeon and Peter Murrell (2002), "Enterprise Restructuring in Transition: A Quantitative Survey", *Journal of Economic Literature*, 60: 739-792.

[52] Dunning, John H. (1980), "Toward an Eclectic Theory of International Production; Some Empirical Tests", *Journal of International Business Studies* 11(1): 9-31.

[53] Dunning, John H. (1998), "Location and the Multinational Enterprise: A Neglected Factor?", *Journal of International Business Studies* 29(1): 45-66.

[54] Easterly, William and Ross Levine (1997), "Africa's Growth Tragedy: Policies and Ethnic Divisions", *Quarterly Journal of Economics* 112: 1203-1250.

[55] Easterly, William and Ross Levine (2003), "Tropics, Germs and Crops: How Endowments Influence Economic Development", *Journal of Monetary Economics* 50: 3-40.

[56] *EBRD Transition Report*, various years, European Bank for Reconstruction and Development, London.

[57] Focarelli, Dario and Alberto Franco Pozzolo (2001), "The Patterns of Cross-Border Bank Mergers and Shareholdings in OECD Countries", *Journal of Banking and Finance* 25: 2305-2337.

[58] Freixas, Xavier and Jean-Charles Rochet (1998), *Microeconomics of Banking*, MIT Press, Cambridge, Massachusetts.

[59] Fries, Steven, Damien Neven and Paul Seabright (2002), "Bank Performance in Transition Economies", William Davidson Institute Working Paper No. 505, University of Michigan, September 2002.

[60] Garibaldi, Pietro, Nada Mora, Ratna Sahay and Jeromin Zettelmeyer (2001), "What Moves Capital to Transition Economies?", *IMF Staff Papers* 48 (Special issue): 109-145.

[61] Glaeser, Edward and Andrei Shleifer (2002), "Legal Origins", *Quarterly Journal of Economics*, 117, 4: 1193-1229.

[62] Glaeser, Edward and Andrei Shleifer (2003), "The Rise of the Regulatory State", *Journal of Economic Literature*, 41: 401-425.

[63] Glaeser, Edward, Simon Johnson and Andrei Shleifer (2001), "Coase v. the Coasians", *Quarterly Journal of Economics* 116, 3: 853-899.

[64] Globerman, Steven and Daniel Shapiro (2002), "Global Foreign Direct Investment Flows: The Role of Governance Infrastructure", *World Development* 30(11): 1899-1919.

[65] Goodhart, Charles A. E. (1998), *Financial Regulation: Why, How and Where Now?*, London: Routledge.

[66] Gorton, Gary and Andrew Winton (1995), "Bank Capital Regulation in General Equilibrium", NBER Working Paper No. 5244, National Bureau of Economic Research (Cambrigde, MA).

[67] Gorton, Gary and Andrew Winton (1998), "Banking in Transition Economies: Does Efficiency Require Instability?", *Journal of Money, Credit and Banking* 30, 3: 621-650.

[68] Gorton, Gary and Andrew Winton (2000), Liquidity Provision, Bank Capital and the Macroeconomy", mimeo, University of Minnesota.

[69] Grossman, Sanford and Oliver Hart (1980), "Disclosure Laws and Takeover Bids", *Journal of Finance* 35: 323-334.

[70] Hall, Robert E. and Charles I. Jones (1999), "Why Do Some Countries Produce So Much More Output per Worker than Others?", *Quarterly Journal of Economics* 114(1): 83-116.

[71] Hasan, Iftekhar and Katherin Marton (2003), "Development and Efficiency of the Banking Sector in A Transitional Economy: Hungarian Experience", *Journal of Banking and Finance* 27: 2249-2271.

[72] Hay, Jonathan R., Andrei Shleifer and Robert W. Vishny, (1996), "Toward a Theory of Legal Reform", *European Economic Review* 40: 559-567.

[73] Hewko, John (2002), "Foreign Direct Investment: Does the Rule of Law Matter?", Working Paper No. 26, April 2002, (Washington: Carnegie Endowment for International Peace).

[74] International Finance Corporation and Standard & Poor's, *Emerging Stock Markets Factbook*, various years.

[75] Jaffee, Dwight and Mark Levonian (2001), "The Structure of Banking Systems in Developed and Transition Economies", *European Financial Management*, 7, 2: 161-181.

[76] Jemric, Igor and Boris Vujcic (2002), "Efficiency of Banks in Croatia: A DEA Approach", *Comparative Economic Studies*, 44, 2: 169-193.

[77] Johnson, Simon, Rafael La Porta, Florencio Lopez-de-Silanes and Andrei Shleifer (2000), "Tunneling", *American Economic Review* 90(2): 22-27.

[78] Kaufmann, Daniel, Aart Kraay and Pablo Zoido-Lobaton (1999a), "Aggregating Governance Indicators", World Bank Policy Research Working Paper No. 2195, (World Bank, Washington D.C.).

[79] Kaufmann, Daniel, Aart Kraay and Pablo Zoido-Lobaton (1999b), "Governance Matters Vol. 1", World Bank Policy Research Working Paper No. 2196, (World Bank, Washington D.C.).

[80] Keren, Michael and Gur Ofer (2002), "The Role of FDI in Trade and Financial Services in Transition: What Distinguishes Transition Economies from Developing Economies?", *Comparative Economic Studies* 34(1): 15-45.

[81] King, Robert G. and Ross Levine, (1993), "Finance and Growth: Schumpeter Might Be Right", *Quarterly Journal of Economics* 108: 717-738.

[82] Kloc, Kazimierz (2002), "Banking Systems and Banking Crises in Ukraine, Georgia and Kyrgyzstan", *Problems of Economic Transition* 45(8): 6-71.

[83] Kominek, Zbigniew (2003), "Stock Markets and Industry Growth: an Eastern European Perspective", EBRD Working Paper No. 81, October 2003.

[84] Konings, Jozef (2001), "The Effects of Foreign Direct Investment on Domestic Firms: Evidence from Firm-Level Panel Data in Emerging Economies", *Economics of Transition* 9(3): 619-633.

[85] Kraft, Evan and D. Tirtiroglu (1998), "Bank Efficiency in Croatia: A Stochastic-Frontier Analysis", *Journal of Comparative Economics* 26(2): 282-300.

[86] Kraft, Evan and Ljubinko Jankov (2003), "Lending Booms, Foreign Bank Entry and Competition: The Croatian Case", Paper presented at the Ninth Dubrovnik Economic Conference on Banking and the Financial Sector in Transition and Emerging Market Economies, June 26-28, 2003.

[87] Kroszner, Randall S. and Raghuram G. Rajan (1994), "Is the Glass-Steagall Act Justified? A Study of the U.S. Experience with Universal Banking Before 1933", *American Economic Review*, 84, 4: 810-832.

[88] Krugman, Paul and Anthony J. Venables, (1990), "Integration and the Competitiveness of Peripheral Industry", CEPR Discussion Paper No. 363, (London: Centre for Economic Policy Research).

[89] Krugman, Paul and Anthony J. Venables, (1995), "Globalization and the Inequality of Nations", *Quarterly Journal of Economics*, 110(4): 857-880.

[90] La Porta, Rafael, Florencio Lopez-de-Silanes and Andrei Shleifer (2002), "Government Ownership of Banks", *Journal of Finance* 57, 1: 265-301.

[91] La Porta, Rafael, Florencio Lopez-de-Silanes and Andrei Shleifer (2003), "What Works in Securities Laws", mimeo, Harvard University.

[92] La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (1998), "Law and Finance", *Journal of Political Economy* 106: 1113-1155.

[93] La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (1997), "Legal Determinants of External Finance", *Journal of Finance* 52: 1131-1150.

[94] La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (2000), "Investor Protection and Corporate Governance", *Journal of Financial Economics*, 58, 1-2: 3-27.

[95] La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (2002), "Investor Protection and Corporate Valuation", *Journal of Finance*, 57, 3 1147-1170.

[96] Landis, James M., *The Administrative Process*, Yale University Press, New Haven, CT, 1938.

[97] Lankes, Hans-Peter and Anthony J. Venables (1996), "Foreign Direct Investment in Economic Transition: the Changing Pattern of Investments", *Economics of Transition* 4, 2: 331-347.

[98] Lankes, Hans-Peter and Nicholas Stern (1997), "Capital Flows to Eastern Europe and the Former Soviet Union", EBRD Working Paper No. 27, EBRD.

[99] Lansbury, Melanie, Nigel Pain and Katerina Smidkova (1996), "Foreign Direct Investment in Central Europe Since 1990: An Econometric Study", *National Institute Economic Review* 106: 104-114.

[100] Levine, Ross (1991), "Stock Markets, Growth and Tax Policy", *Journal of Finance* 46(4): 1445-1465.

[101] Levine, Ross (1997), "Financial Development and Economic Growth: Views and Agenda", *Journal of Economic Literature*, 35, 2: 688-726.

[102] Levine, Ross and Sara Zervos, (1998), "Stock Markets, Banks, and Economic Growth", *American Economic Review 88: 537-558.*

[103] Levine, Ross, Norman Loayza and Thorsten Beck, (2000), "Financial Intermediation and Growth: Causality and Causes", *Journal of Monetary Economics* 46: 31-77.

[104] Lucas, Robert E. B. (1993), "On the Determinants of Direct Foreign Investment: Evidence from East and Southeast Asia", *World Development* 21(3): 391-406.

[105] Markusen, James R. and Anthony J. Venables (1999), "Foreign Direct Investment as a Catalyst for Industrial Development", *European Economic Review* 43(2): 335-356.

[106] Meyer, Klaus E. (1995), "Foreign Direct Investment in the Early Years of Economic Transition: A Survey", *Economics of Transition* 3: 301-320.

[107] Miller, Stewart R. and Arvind Parkhe (1998), "Patterns in the Expansion of U.S. Banks' Foreign Operations", *Journal of International Business Studies* 29(2): 359-389.

[108] Modigliani, Franco and Enrico Perotti (1997), "Protection of Minority Interest and the Development of Security Markets", *Journal of Managerial and Decision Economics* 18: 519-528.

[109] Mulligan, Casey B. and Andrei Shleifer (2004), "Population and Regulation", NBER Working Paper No. 10234, National Bureau of Economic Research (Cambrigde, MA).

[110] North, Douglass C. (1991), "Institutions", *Journal of Economic Perspectives* 5, 1: 97-112.

[111] O'Grady, Shawna and Henry W. Lane (1996), "The Psychic Distance Paradox", *Journal of International Business Studies*, 27(2): 309-333.

[112] Pajuste, Anete (2002), "Corporate Governance and Stock Market Performance in Central and Eastern Europe: A Study of Nine Countries, 1994-2001", mimeo, Stockholm School of Economics.

[113] Papazoglou, Christos and Panagiotis Liargovas (1997), "An Assessment of Foreign Direct Investment towards the BSEC Transition Economies", *Economia Internazionale* 50(3): 475-487.

[114] Perotti, Enrico (1993), "Bank Lending in Transition Economies", *Journal of Banking and Finance*, 17, 5: 1021-1032.

[115] Perotti, Enrico (2002), "Lessons from the Russian Meltdown: The Economics of Soft Legal Constraints", *International Finance*, 5, 3: 359-399.

[116] Perotti, Enrico and Pieter van Oijen, (2001), "Privatization, Political Risk and Stock Market Development in Emerging Economies", *Journal of International Money and Finance*, 20, 1: 43-69.

[117] Perotti, Enrico and Jerome Sgard (2001), "Banking Regulation under Extreme Legal Underdevelopment: Lessons from the Russian Meltdown", mimeo, University of Amsterdam.

[118] Perry, Amanda (2000), "Effective Legal Systems and Foreign Direct Investment: In Search of the Evidence", *The International and Comparative Law Quarterly* 49: 779-799.

[119] Pigou, Arthur C. (1938), *The Economics of Welfare*, 4th Edition, MacMillan, London.

[120] Pistor, Katharina (2000), "Patterns of Legal Change: Shareholder and Creditor Rights in Transition Economies", *European Business Organization Law Review* 1, 1: 59-108.

[121] Pistor, Katharina (2001), "Law as a Determinant for Equity Market Development – the Experience of Transition Economies", in Peter Murrell (Ed.), Assessing the Value of Law in Transition Economies, University of Michigan Press, Ann Arbor, 2001: 249-287.

[122] Pistor, Katharina, Martin Raiser and Stanislaw Gelfer (2000), "Law and Finance in Transition Economies", *Economics of Transition*, 8, 2: 325-368.

[123] Portes, Richard, Helene Rey and Yonghyup Oh (2001), "Information and Capital Flows: The Determinants of Transactions in Financial Assets", *European Economic Review* 45(4-6): 783-796.

[124] Pye, Robert (1998), "Foreign Direct Investment in Central Europe: Experiences of Major Western Investors", *European Management Journal* 16(4): 378-389.

[125] Qian, Jun and Philip E. Strahan (2004), "How Law and Institutions Shape Financial Contracts: The Case of Bank Loans", mimeo Boston College.

[126] Rajan, Raghuram and Luigi Zingales (1995), "What Do We Know from Capital Structure: Some Evidence from the International Data", *Journal of Finance* 50: 1421-1460.

[127] Rajan, Raghuram and Luigi Zingales (1998), "Financial Dependence and Growth", *American Economic Review* 88: 559-586.

[128] Rajan, Raghuram and Luigi Zingales (2002), "The Great Reversals: the Politics of Financial Development in the Twentieth Century", *Journal of Financial Economics* 69: 5-50.

[129] Ramasastry, Anita (2002), "What Local Lawyers Think: A Retrospective on the EBRD's Legal Indicator Surveys", *Law in Transition*, Autumn 2002: 14-30.

[130] Ramasastry, Anita and Stefka Slavova (1999), "Market Perceptions of Financial Law in the Region - EBRD Survey Results", *Law in Transition*, Spring 1999: 24-34.

[131] Recanatini, Francesca, Scott J. Wallsten and Lixin Colin Xu (2000), "Surveying Surveys and Questioning Questions: Learning from the World Bank Experience", World Bank Policy Research Working Paper No. 2307, (World Bank: Washington D.C.).

[132] Resmini, Laura (2000), "The Determinants of Foreign Direct Investment in the CEECs: New Evidence from Sectoral Patterns", *Economics of Transition* 8(3): 665-689.

[133] Shea, John (1997), "Instrument Relevance in Multivariate Linear Models: A Simple Measure", *Review of Economics and Statistics*, 79(2): 348-352.

[134] Shiells, Clinton R. (2003), "FDI and the Investment Climate in the CIS Countries", IMF Policy Discussion Paper No. PDP/03/5 (Washington D.C.: International Monetary Fund).

[135] Shleifer, Andrei and Daniel Wolfenzon (2002), "Investor Protection and Equity Markets", *Journal of Financial Economics*, 66: 3-27.

[136] Shleifer, Andrei and Robert W. Vishny (1986), "Large Shareholders and Corporate Control", *Journal of Political Economy* 94(3): 461-488.

[137] Shleifer, Andrei and Robert W. Vishny (1997), "A Survey of Corporate Governance", *Journal of Finance* 52: 737-83.

[138] Slavova, Stefka and Randi Ryterman (2004), "Resolving Business Disputes in South Eastern Europe: The Role of the Courts", in Broadman, et al. *Building Market Institutions in South Eastern Europe: Comparative Prospects for Investment and Private Sector Development*, World Bank, Washington D.C.

[139] Smarzynska, Beata (2002), "The Composition of Foreign Direct Investment and Protection of Intellectual Property Rights: Evidence from Transition Economies", *European Economic Review* 48(1): 39-62.

[140] Staiger, Douglas and James H. Stock (1997), "Instrumental Variables Regression with Weak Instruments", *Econometrica*, 65(3): 557-586.

[141] Standard & Poor's, *Emerging Markets Data Base*, electronic edition.

[142] Stigler, George J. (1964), "Public Regulation of the Securities Market", *Journal of Business* 37: 117-142.

[143] Stigler, George J. (1971), "The Theory of Economic Regulation", *Bell Journal of Economics* 2: 3-21.

[144] Stulz, Rene M. and Rohan Williamson (2003), "Culture, Openness, and Finance", *Journal of Financial Economics* 70: 313-349.

[145] Sudman, Seymour, Norman Bradburn and Norbert Schwarz (1996), *Thinking About Answers: The Application of Cognitive Processes to Survey Methodology.* Jossey-Bass.

[146] Szapary, Gyorgy (2002), "Banking Sector Reform in Hungary: What Have We Learned and What Are the Prospects?", *Comparative Economic Studies* 44(2): 103-124.

[147] Tao, Zhigang and Susheng Wang (1998), "Foreign Direct Investment and Contract Enforcement", *Journal of Comparative Economics* 26: 761-782.

[148] Thakor, Anjan V. (1996), "Capital Requirements, Monetary Policy, and Aggregate Bank Lending: Theory and Evidence", *Journal of Finance* 51: 279-324.

[149] Thorne, Alfredo (1993), "Eastern Europe's Experience with Banking Reform: Is There a Role for Banks in the Transition?", *Journal of Banking and Finance* 17: 959-1000.

[150] Thornton, Judith and Nadezhda N. Mikheeva (1996), "The Strategies of Foreign and Foreign-Assisted Firms in the Russian Far East: Alternatives to Missing Infrastructure", *Comparative Economic Studies* 38(4): 85-119.

[151] United States Cental Intelligence Agency, *Country Factbook 2004*, online edition, Washington D.C.

[152] Wagner, Helmut (2000), "Central Banking in Transition Countries", *Eastern European Economics* 38(4): 6-53.

[153] Wei, Shang-Jin (2000a), "Local Corruption and Global Capital Flows", *Brookings Papers on Economic Activity* 2: 303-354.

[154] Wei, Shang-Jin (2000b), "How Taxing is Corruption on International Investors?", *The Review of Economics and Statistics* 82(1): 1-11.

[155] Weill, Laurent (2003), "Banking Efficiency in Transition Economies: The Role of Foreign Ownership", *Economics of Transition* 11(3): 569-592.

[156] Wheeler, David and Ashoka Mody (1992), "International Investment Location Decisions: The Case of U.S. Firms", *Journal of International Economics* 33: 57-76.

[157] World Bank (2001), *Finance for Growth: Policy Choices in a Volatile World: A World Bank Policy Research Report*, The World Bank: Oxford University Press.

[158] World Bank (2004a), *Doing Business in 2004: Understanding Regulation*, Washington D.C.

[159] World Bank (2004b), *World Development Indicators 2003*, online edition, Washington D.C.

[160] Yudaeva, Ksenia, Konstantin Kozlov, Natalia Melentieva and Natalia Ponomareva (2003), "Does Foreign Ownership Matter: The Russian Experience", *Economics of Transition* 11(3): 383-409.

[161] Zingales, Luigi (1994), "The Value of the Voting Right: A Study of the Milan Stock Exchange Experience", *The Review of Financial Studies* 7, 1: 125-148.